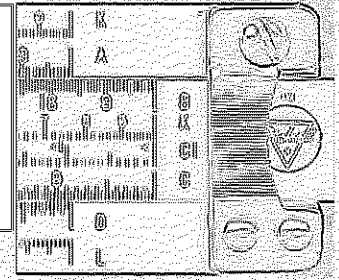
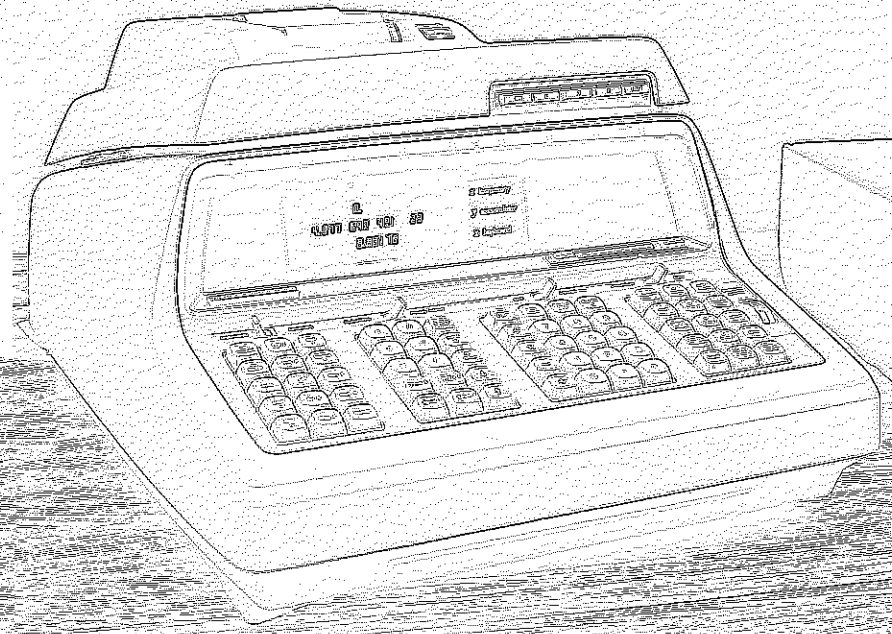
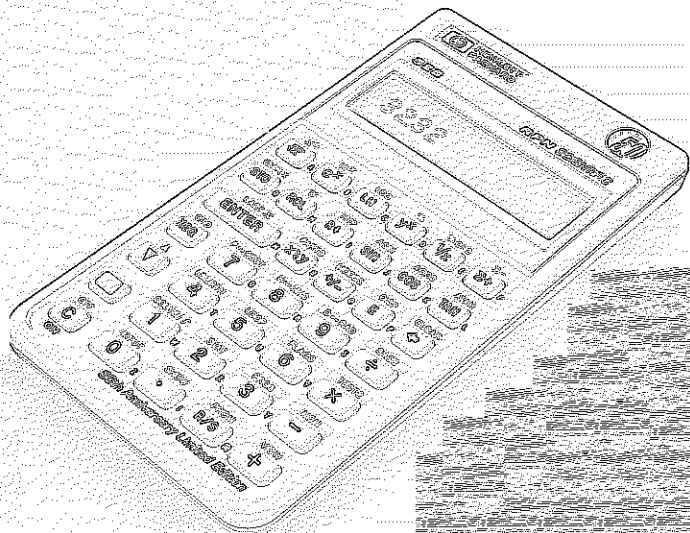
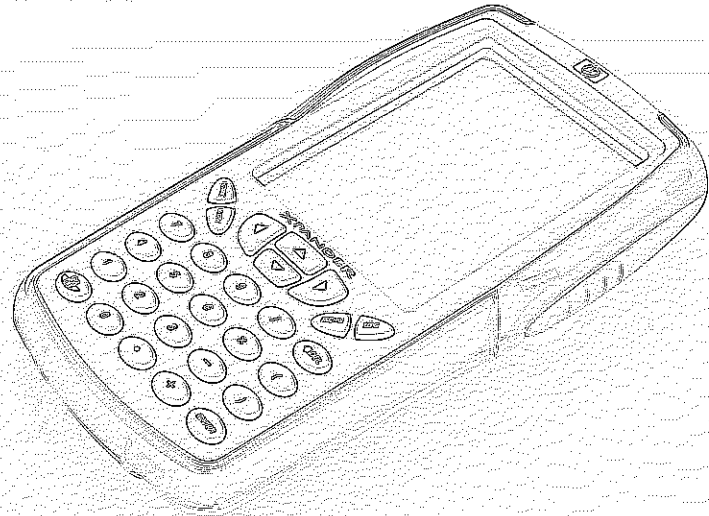
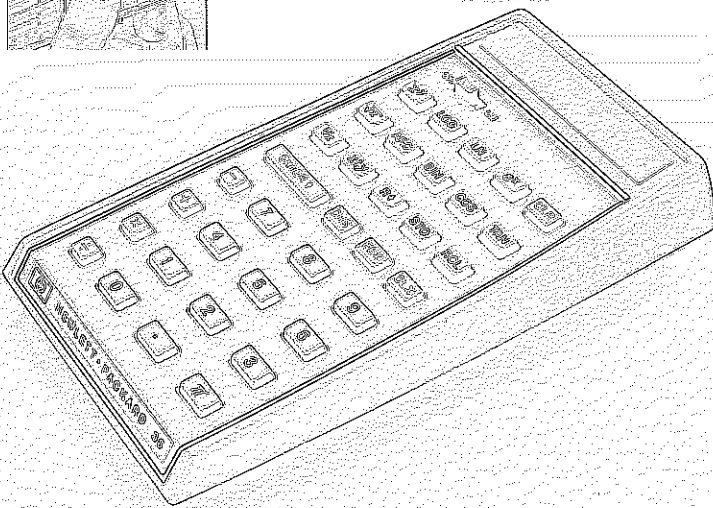
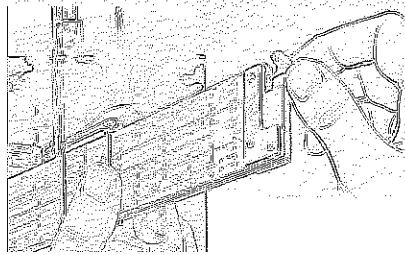
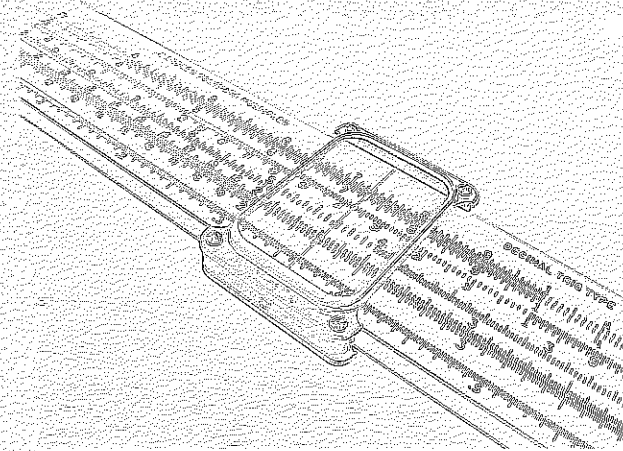
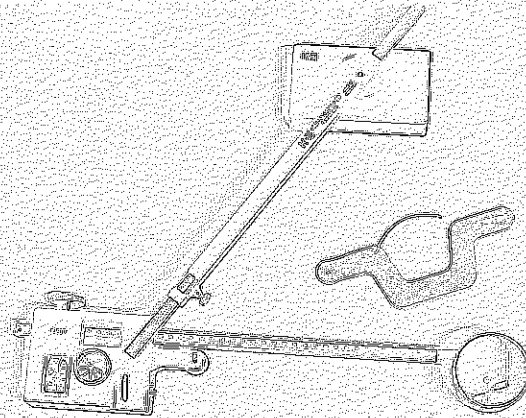
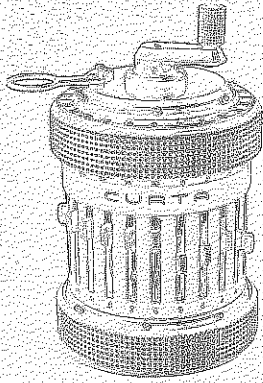


Texas Competitive Mathematics
Web - <http://www.texasmath.org>
Fax - (206) 666-MATH/(206) 666-6284
E-Mail - webmaster@texasmath.org



1963-64 UIL Number Sense
(13 pages)



The University of Texas Interscholastic League

Number Sense Test, Series W-1

Contestant's Number.....

Contestant's Score.....

**Read Directions Carefully
Before Beginning Test**

**Do Not Unfold This Sheet
Until Told to Begin**

Directions: Do not turn this page until the person conducting the test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. **ALL PROBLEMS ARE TO BE SOLVED MENTALLY.** Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a star (*) require only approximate answers; any answer to a starred problem that is within five per cent of the exact answer will be scored correct; all other problems require exact answers.

Person conducting contest should explain these directions carefully to the contestants.

Stop—Wait for Signal

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(1) $84 - 39 =$</p> <p>(2) $196 \div 28 =$</p> <p>(3) $188 + 78 =$</p> <p>(4) $28 \times 7\frac{1}{2} =$</p> <p>(5) $313 - 166 + 53 =$</p> <p>(6) The area of a triangle of base $7\frac{1}{2}$ in. and altitude 28 in. is
..... sq. in.</p> <p>(7) $75 \times 16 =$</p> <p>(8) Find the interest on \$1600 for one year at $4\frac{3}{4}\%$. \$.....</p> <p>(9) $2\frac{5}{8} + 3\frac{1}{8} - 2\frac{3}{4} =$</p> <p>* (10) A car travelled 344 miles at a cost of \$41.28. Estimate the cost per mile ¢.</p> <p>(11) Subtract \$3.44 from \$34.40. \$.....</p> <p>(12) A car travelled 344 miles at a cost of 9¢ a mile. Find the cost of the trip. \$.....</p> <p>(13) A car travelled 334 miles at a cost of 9¢ a mile. Find the cost of the trip. \$.....</p> <p>(14) A car travelled 344 miles at a cost of $8\frac{1}{2}\text{¢}$ a mile. Find the cost of the trip.</p> <p>(15) Find the area of a triangle of altitude 19 in. and base 18 in.....
..... sq. in.</p> <p>(16) 18 feet = inches.</p> <p>(17) 252 inches = feet.</p> <p>(18) Find the sum of \$17.53, \$16.38, and \$13.47. \$.....</p> <p>(19) Write in figures: seven and seven-eighths million.</p> <p>* (20) If a car gets $14\frac{1}{2}$ miles to the gallon of fuel, estimate the cost of fuel for a trip of 344 miles at 37.9¢ a gallon. \$.....</p> <p>(21) $5\frac{1}{2}$ is to 22 as $7\frac{1}{2}$ is to</p> <p>(22) $16\frac{2}{3}$ is to 100 as is to 88.</p> <p>(23) Find the altitude of a parallelogram of area 342 sq in. and base 18 in. in.</p> | <p>(24) $88 \div 14\frac{2}{3} =$</p> <p>(25) Find the average of 61, 86, 78, 79.</p> <p>(26) One-third of 7% is</p> <p>(27) Two-thirds of 15% is</p> <p>(28) One-third of 15% is</p> <p>(29) A card is drawn at random from an ordinary deck of playing cards. Find the probability that it is either a spade or a jack.</p> <p>* (30) If 10 liters are equivalent to 2.64 gallons, estimate the cost of 20 gallons of gasoline at 8¢ a liter. \$.....</p> <p>(31) $25 \times 24 =$</p> <p>(32) $75 \times 24 =$</p> <p>(33) $25\frac{3}{8} \times 24 =$</p> <p>(34) $25 \times 24\frac{1}{2} =$</p> <p>(35) $25\frac{3}{8} \times 24\frac{1}{2} =$</p> <p>(36) Find the sixth term of the sequence $4\frac{1}{4}, 4\frac{1}{2}, 5, 5\frac{1}{2}, 5\frac{3}{4}, \dots$</p> <p>(37) $4\frac{1}{4} + 4\frac{1}{2} + 5 + 5\frac{1}{2} + 5\frac{3}{4} + 6\frac{1}{2} =$</p> <p>(38) $620 \div 124 =$</p> <p>(39) $620 \div 24\frac{1}{2} =$</p> <p>* (40) Convert 3968 pesos into dollars at 12.4 pesos to the dollar.
..... dollars.</p> <p>(41) If 60 miles an hour is equivalent to 100 kilometers an hour, then 21 miles an hour is equivalent to kilometers an hour.</p> <p>(42) Convert 320 dollars into pesos at $12\frac{1}{2}$ pesos to the dollar.
..... pesos.</p> <p>(43) Convert 340 dollars into pesos at $12\frac{1}{2}$ pesos to the dollar.
..... pesos.</p> <p>(44) Convert 320 dollars into pesos at $12\frac{1}{4}$ pesos to the dollar.
..... pesos.</p> <p>(45) $31 \frac{4}{9} - 17 \frac{8}{9} =$</p> <p>(46) $31\frac{1}{4} - 17\frac{5}{8} =$</p> <p>(47) $31 \frac{4}{9} - 17 \frac{7}{9} - 8\frac{3}{8} =$</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- (48) $2\frac{1}{2} \times 1\frac{3}{8} =$
- (49) $3\frac{1}{4} \times 1\frac{3}{8} \times 2\frac{1}{2} =$
- * (50) Convert 1410 kilometers into miles, assuming that 100 kilometers are equivalent to 62 miles. miles.
- (51) What sum must be invested at 4.8% in order that the annual interest be \$240? \$.....
- (52) If the annual interest on an investment of \$8000 is \$360, what is the interest rate? %.
- (53) Find the tax on a ranch of 1400 acres valued at \$80 an acre if the tax rate is $2\frac{1}{8}$ per cent. \$.....
- (54) $\frac{7}{8}$ is one-half of what number?
- (55) $\frac{7}{8}$ is what per cent of $3\frac{1}{2}$? %.
- (56) $\frac{7}{8}$ is what per cent more than $\frac{5}{8}$? %.
- (57) $\frac{7}{8}$ is what per cent less than $1\frac{1}{4}$? %.
- (58) $1\frac{3}{4}$ is what per cent more than $1\frac{1}{4}$? %.
- (59) $1\frac{3}{4}$ is what per cent less than $2\frac{1}{2}$? %.
- * (60) A year ago Oscar had \$677.28 in savings. Today he has 16% more. How much has he today? \$.....
- (61) Subtract \$37.77 from the sum of \$28.66 and \$44.55. \$.....
- (62) Subtract the sum of \$18.89 and \$18.88 from \$73.11. \$.....
- (63) Subtract the sum of \$19.66 and \$18.12 from the sum of \$27.55 and \$45.66. \$.....
- (64) $16 \times 16\frac{3}{4} =$
- (65) $16\frac{7}{8} \times 16 =$
- (66) $(33\frac{3}{4} \times 8) - (16 \times 16\frac{3}{4}) =$
- (67) $(16\frac{1}{2} \times 7\frac{1}{2}) + (33 \times 6\frac{1}{4}) =$
- (68) $14\frac{1}{2}$ is the square root of what number?
- (69) A speed of 13,200 feet a second is equivalent to how many miles an hour? miles per hour.
- * (70) Estimate the cube root of 166 $\frac{2}{3}$
- (71) Two dice are tossed. What is the probability that either a six or an eight will show?
- (72) Of 354 girls in a school, 238 take sewing, 277 take typing, and 48 take neither. How many take both?
- (73) How many take typing only?
- (74) How many do not take typing?
- (75) The greatest common divisor of 48 and 112 is
- (76) The perimeter of a square decreases from 53 in. to 45 in. Find the corresponding decrease in the area. sq. in.
- (77) The area of a square increases from $42\frac{1}{4}$ sq. in. to $112\frac{1}{4}$ sq. in. Find the corresponding increase in the perimeter. in.
- (78) A box contains two red balls and two blue balls. Two balls are taken at random from the box. What is the probability that one is red and one is blue?
- (79) An employee receives a ten per cent increase in wages and now earns \$605 a month. How much did he earn before the increase? \$.....
- * (80) Estimate the cost of a circular carpet of diameter 13 feet at \$8.40 a square yard. \$.....

The University of Texas Interscholastic League

Number Sense Test Series W-4

Contestant's Number.....

Contestant's Score.....

**Read Directions Carefully
Before Beginning Test**

**Do Not Unfold This Sheet
Until Told to Begin**

Directions: Do not turn this page until the person conducting the test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. ALL PROBLEMS ARE TO BE SOLVED MENTALLY. Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a star (*) require only approximate answers; any answer to a starred problem that is within five per cent of the exact answer will be scored correct; all other problems require exact answers.

Person conducting contest should explain these directions carefully to the contestants.

Stop—Wait for Signal

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(1) $137+76=$</p> <p>(2) $211-78=$</p> <p>(3) $12\times 19=$</p> <p>(4) $212-79-44=$</p> <p>(5) $247\div 19=$</p> <p>(6) $(13\times 14) + (14\times 17) =$</p> <p>(7) $12\frac{3}{8}\times 21=$</p> <p>(8) $15\frac{3}{8}+8\frac{3}{4}-8\frac{3}{8}=$</p> <p>(9) $238\div 3\frac{1}{2}=$</p> <p>* (10) If 10 liters are equivalent to 2.64 gallons, then 105 liters are equivalent to gallons.</p> <p>(11) $123\frac{1}{2}\div 9\frac{1}{2}=$</p> <p>(12) Find the sum of \$17.45, \$8.86, and \$17.66. \$.....</p> <p>(13) Find the longest side of a triangle two of whose sides are 27 in. and 39 in. and whose perimeter is 95 in. in.</p> <p>(14) Find the area of a triangle of altitude 35 in. and base 15 in. sq in.</p> <p>(15) Find the base of a triangle of area 216 sq. in and altitude 27 in. in.</p> <p>(16) How many sheets at \$3.25 each can be bought for \$156?</p> <p>(17) Subtract \$38.87 from \$57.65. \$.....</p> <p>(18) Subtract the sum of \$19.78 and \$19.09 from \$57.62. \$.....</p> <p>(19) Find the perimeter of a right triangle of base $7\frac{1}{2}$ in. and altitude 10 in. in.</p> <p>* (20) If 10 liters are equivalent to 2.64 gallons, then 15 gallons are equivalent to liters.</p> <p>(21) $8\frac{1}{4}-7\frac{5}{8}+11\frac{3}{8}=$</p> <p>(22) $11\frac{3}{8}-8\frac{3}{8}+7\frac{3}{4}=$</p> <p>(23) $22\frac{3}{8}-8\frac{3}{8}-7\frac{3}{4}=$</p> <p>(24) $7\frac{5}{8}+8\frac{3}{4}+6-22\frac{3}{8}=$</p> <p>(25) Find the cost of a 15-pound turkey at 39¢ a pound. \$.....</p> | <p>(26) Find the cost of a 17-pound turkey at 39¢ a pound. \$.....</p> <p>(27) Find the cost of a 15-pound turkey at 37¢ a pound. \$.....</p> <p>(28) How many pounds of turkey can be bought for \$6.24 at 39¢ a pound? pounds.</p> <p>(29) Find the cost per pound of a turkey weighing 18 pounds and selling for \$7.02.¢.</p> <p>* (30) Estimate the cost of gasoline for a trip of 315 miles in a car getting $17\frac{1}{2}$ miles to the gallon at $33\frac{9}{10}$¢ a gallon. \$.....</p> <p>(31) 9 is what per cent more than $7\frac{1}{2}$?%</p> <p>(32) $2\frac{1}{2}$ is what per cent less than $3\frac{1}{2}$?%</p> <p>(33) 51 is what per cent of 170?%</p> <p>(34) $7\frac{1}{2}$ is what per cent less than 9?%</p> <p>(35) $7\frac{1}{2}$ is what per cent of 9?%</p> <p>(36) If B is $37\frac{1}{2}\%$ less than A, then A is what per cent greater than B? %.</p> <p>(37) If dinner for two costs 93 pesos, find the cost in dollars at 12% pesos to the dollar. dollars.</p> <p>(38) If the first volume of a set of reference books sells for 49¢ and each of the remaining 24 volumes for 97¢, find the cost of the entire set. \$.....</p> <p>(39) $930\div 12\frac{3}{4}=$</p> <p>* (40) If one English pound is equivalent to $2\frac{1}{2}$ dollars and 12.4 Mexican pesos are equivalent to one dollar, convert 34,720 pesos into pounds. pounds.</p> <p>(41) $75\times 24\frac{3}{4}=$</p> <p>(42) 24 is to 15 as is to 35.</p> <p>(43) Compute the tax on a house valued at \$17,000 if the tax rate is 3.6%. \$.....</p> <p>(44) If 350 pegs cost \$17.15, find the cost per thousand. \$.....</p> <p>(45) Find the average of 58, $58\frac{1}{2}$, 37%, and 49%.</p> <p>(46) Write in figures: nine and seven-eighths million.</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- (47) If sheets sell for \$3.39 each or four for \$12.80, how much is saved by buying four?
- (48) If 21 ounces of pepper sells for \$2.87, how much should 24 ounces sell for? \$.....
- (49) A recipe for relish calls for 5 cups of vinegar and 12 green tomatoes. How many cups of vinegar should be used with 30 green tomatoes?
- * (50) How far can a rocket travel in 748 hours at a speed of 18,375 feet a second? miles.
- (51) How long does it take to drive 798 miles at 57 miles an hour? hours.
- (52) How far can you drive in 15 hours 20 minutes at 57 miles an hour? miles.
- (53) At what speed should you drive in order to cover 552 miles in 12 hours? miles per hour.
- (54) $26 \times 19 =$
- (55) At what speed should you drive in order to cover 494 miles in 8 hours 40 minutes? miles per hour.
- (56) At what speed should you drive in order to cover 260 miles in 8 hours 7½ minutes? miles per hour.
- (57) $(26 \times 19) + (52 \times 38) =$
- (58) $(52 \times 19) - (26 \times 38) =$
- (59) $(52 \times 38) - (26 \times 38) =$
- * (60) At what speed should you drive in order to cover 1111 miles in 16 hours 50 minutes? miles per hour.
- (61) $494 \div 8\% =$
- (62) $1111 \div 16\% =$
- (63) Find the tax on 16% million gallons at 6.6¢ a gallon.
\$.....
- (64) If an employee receives a ten per cent cut in salary and now earns \$387 a month, how much did he earn before the cut?
\$..... a month.
- (65) If a manufacturer increases his production by twenty per cent and now produces 804 units a month, how many units did he produce each month before the increase?
- (66) If a company increases its production from 1340 units a month to 1608 units a month, by what per cent does production increase? %.
- (67) If the tax on 875,000 gallons of gasoline is \$61,250, find the tax on 375,000 gallons. \$.....
- (68) If the tax on gasoline is 7½¢ a gallon, how many gallons must be taxed to yield \$10,950 in revenue? gallons.
- (69) A box contains 16 white balls, 14 red balls, and 26 blue balls. A ball is taken at random from the box. Find the probability that the ball is either white or blue.
- * (70) Estimate the area of an equilateral triangle of altitude 10 in. sq. in.
- (71) The square root of (18×32) is
- (72) The perimeter of a square increases from 14¾ in. to 22¼ in. Find the corresponding increase in the area. sq. in.
- (73) Two dice are tossed. Find the probability that neither 8, 9, nor 10 will show.
- (74) A box contains two green balls and four blue balls. Two balls are taken at random from the box. Find the probability that one is green and one is blue.
- (75) The hypotenuse of a right triangle is 50 in. and the altitude is 14 in. Find the area. sq. in.
- (76) A card is drawn at random from an ordinary deck of 52 playing cards. Find the probability that it is neither a king nor a queen nor a spade.
- (77) The cube root of 15% is
- (78) $(3\frac{1}{2})^2 - (2\frac{1}{2})^2 =$
- (79) $17^3 - 16^3 =$
- * (80) If the diameter of a circle is increased from 15½ in. to 23½ in., find the corresponding increase in the area. sq. in.

The University of Texas Interscholastic League

Number Sense Test, Series W-5

Contestant's Number.....

Contestant's Score.....

**Read Directions Carefully
Before Beginning Test**

**Do Not Unfold This Sheet
Until Told to Begin**

Directions: Do not turn this page until the person conducting the test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. ALL PROBLEMS ARE TO BE SOLVED MENTALLY. Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a star (*) require only approximate answers; any answer to a starred problem that is within five per cent of the exact answer will be scored correct; all other problems require exact answers.

Person conducting contest should explain these directions carefully to the contestants.

Stop—Wait for Signal

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(1) The sum of \$26.66 and \$45.58 is \$.....</p> <p>(2) The difference of \$45.58 and \$26.66 is \$.....</p> <p>(3) Five per cent of 968 is</p> <p>(4) $15 \times 70\% =$</p> <p>(5) $368 + 555 - 769 =$</p> <p>(6) $7\frac{1}{2}\%$ of \$968 = \$.....</p> <p>(7) $342 \div 18 =$</p> <p>(8) $342 \div 38 =$</p> <p>(9) $12\frac{1}{2}\%$ of 968 =</p> <p>* (10) Estimate the cost of 3118 sq. ft. of tile at 88¢ a square foot.
\$.....</p> <p>(11) Find the interest on \$7000 for one year at 4.8% a year.
\$.....</p> <p>(12) Find the interest on \$8000 for one year at 4.85% a year.
\$.....</p> <p>(13) How much should be invested for one year at 3% in order to earn \$255 in interest? \$.....</p> <p>(14) At what annual rate of interest should \$7500 be invested for one year in order to yield \$240 in interest?%</p> <p>(15) Find the base of a triangle of area 342 sq. in. and altitude 36 in.
..... in.</p> <p>(16) $(18 \times 19) - (16 \times 16) =$</p> <p>(17) $(42 \times 38) - (21 \times 66) =$</p> <p>(18) $18\frac{5}{8} + 28\frac{3}{4} - 39\frac{7}{8} =$</p> <p>(19) Find the base of a right triangle of altitude 18 in. and hypotenuse $19\frac{1}{2}$ in. in.</p> <p>* (20) If 10 liters are equivalent to 2.64 gallons, estimate the cost of $11\frac{1}{4}$ gallons of gasoline at $8\frac{1}{2}$¢ a liter. \$.....</p> <p>(21) $10\frac{1}{2} \times 3\% =$</p> <p>(22) $10\frac{1}{2} \times 7\frac{1}{2} =$</p> <p>(23) $10\frac{1}{2} \times 4\% =$</p> | <p>(24) $1\frac{1}{7} \times 4\% \times 10\frac{1}{2} =$</p> <p>(25) $78 \div 1\frac{1}{2} =$</p> <p>(26) Find the cost of $7\frac{1}{2}$ liters of gasoline at 24¢ a liter. \$.....</p> <p>(27) Find the cost of 24 liters of gasoline at $8\frac{1}{2}$¢ a liter. \$.....</p> <p>(28) How many liters of gasoline can be bought for \$4.08 at $8\frac{1}{2}$¢ a liter? liters.</p> <p>(29) If 66 liters of gasoline cost \$4.29, find the cost per liter. ¢.</p> <p>* (30) If 100 lire are equivalent to 16¢, convert \$19.20 into lire.
..... lire.</p> <p>(31) Of 707 girls in a school, 488 take mathematics, 297 take physics, and 158 take neither. How many take both?</p> <p>(32) How many take physics only?</p> <p>(33) How many take mathematics only?</p> <p>(34) Write in figures: three-sixteenths of one billion.</p> <p>(35) How long does it take to cover 299 miles at 46 miles an hour?
..... hours.</p> <p>(36) How far can you drive in 6 hours 12 minutes at 55 miles an hour?
..... miles.</p> <p>(37) How fast must you drive in order to cover 143 miles in two hours ten minutes? miles per hour.</p> <p>(38) How far can an airplane fly in six hours thirty minutes at 630 miles an hour? miles.</p> <p>(39) How long does it take an airplane to fly 7500 miles at 625 miles an hour? hours.</p> <p>* (40) How long will it take a rocket traveling 13,300 feet a second to cover 360,000 miles? hours.</p> <p>(41) $143 \div 2\frac{1}{2} =$</p> <p>(42) $55 \times 6\frac{1}{2} =$</p> <p>(43) If car A costs 20% more than car B and car C costs 20% less than car B, what per cent more does A cost than C?%</p> <p>(44) If car B costs 15% more than car A and car C costs 40% more than car B, what per cent more does C cost than A?%</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- (45) Triangle A has base 24 in. and altitude 64 in. Triangle B has base 80 in. and altitude 24 in. The area of A is what per cent less than that of B?
- (46) The area of B is what per cent greater than that of A?
- (47) $143 \div 4\frac{1}{3} =$
- (48) $225 \div 6\frac{1}{4} =$
- (49) $8\frac{1}{10}$ is what per cent more than 6?
- * (50) 684.666 is what per cent less than 837?
- (51) $8 \times 28\frac{3}{4} =$
- (52) $8\frac{3}{4} \times 28 =$
- (53) $14\frac{5}{8} \times 8 =$
- (54) $8 \times 28\frac{1}{4} \times 21\frac{1}{2} =$
- (55) $3\frac{1}{3} \times 21\frac{1}{2} =$
- (56) $2\frac{2}{9} \times 4\frac{1}{2} =$
- (57) $4\frac{1}{2} \times 2\frac{1}{2} \times 4\frac{4}{9} =$
- (58) $230 \div 14\frac{3}{8} =$
- (59) $245 \div 8\frac{3}{4} =$
- * (60) Estimate the cost of a rug of circumference 42 feet at \$6.75 a square yard. \$.....
- (61) If 720 pegs cost \$54, find the cost per thousand. \$.....
- (62) If 240 pegs cost \$54, find the cost per thousand. \$.....
- (63) If pegs cost \$150 a thousand, how many can be bought for \$54?
- (64) If pegs cost \$30 a thousand, how many can be bought for \$10.80?
- (65) If pegs cost \$225 a thousand, find the cost of 480 pegs. \$.....
- (66) How many gallons of gasoline must be taxed at 9¢ a gallon to yield \$79,200 in revenue? gallons.
- (67) If the tax on thirteen million gallons of gasoline is \$975,000, find the tax on one thousand gallons. \$.....
- (68) Find the tax on four and one-half million gallons of gasoline at 2 2/9¢ a gallon. \$.....
- (69) A pair of dice is rolled. Find the probability that either 4 or 7 will show.
- * (70) If one furlong is equivalent to 220 yards, a speed of 44 miles an hour is equivalent to how many furlongs an hour?
- (71) $(78 \times 41) + (59 \times 78) =$
- (72) $(61 \times 78) - (78 \times 41) =$
- (73) The square root of $21\frac{7}{9}$ is
- (74) The perimeter of a square is increased from 34 in. to 46 in. Find the corresponding increase in the area.sq. in.
- (75) The base of a right triangle is 48 in. and the hypotenuse is 50 in. Find the area. sq. in.
- (76) $6\frac{1}{2}$ is the square root of
- (77) A box contains six green balls and seven red balls. Two balls are taken at random from the box. Find the probability that one is green and one is red.
- (78) What is the probability that both balls are green?
- (79) What is the probability that both balls are red?
- * (80) Estimate the area of an equilateral triangle of perimeter 42 in. sq. in.

The University of Texas Interscholastic League

Number Sense Test, Series W-6

Contestant's Number.....

Contestant's Score.....

**Read Directions Carefully
Before Beginning Test**

**Do Not Unfold This Sheet
Until Told to Begin**

Directions: Do not turn this page until the person conducting the test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. ALL PROBLEMS ARE TO BE SOLVED MENTALLY. Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a star (*) require only approximate answers; any answer to a starred problem that is within five per cent of the exact answer will be scored correct; all other problems require exact answers.

Person conducting contest should explain these directions carefully to the contestants.

Stop—Wait for Signal

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(1) The sum of \$48.66 and \$28.58 is \$.....</p> <p>(2) The difference of \$48.58 and \$28.66 is \$.....</p> <p>(3) Five per cent of 1968 is</p> <p>(4) $15 \times 90\% =$</p> <p>(5) $568 + 755 - 969 =$</p> <p>(6) $7\frac{1}{2}\%$ of \$1968 = \$.....</p> <p>(7) $506 \div 22 =$</p> <p>(8) $506 \div 46 =$</p> <p>(9) $12\frac{1}{2}\%$ of 1968 =</p> <p>* (10) Estimate the cost of 6236 square feet of tile at 44¢ a square foot.
\$.....</p> <p>(11) Find the interest on \$14,000 for one year at 2.4% a year.
\$.....</p> <p>(12) Find the interest on \$14,000 for one year at 2.45% a year.
\$.....</p> <p>(13) Find the interest on \$16,000 for one year at 2.45% a year.
\$.....</p> <p>(14) How much should be invested for one year at $2\frac{1}{4}\%$ in order to yield \$360 in interest? \$.....</p> <p>(15) At what annual rate of interest should \$16,000 be invested for one year in order to yield \$440 in interest? %.</p> <p>(16) Find the altitude of a triangle of area 684 sq. in. and base 72 in.
..... in.</p> <p>(17) $(66 \times 33) - (22 \times 55) =$</p> <p>(18) Find the area of a right triangle of base 18 in. and hypotenuse $19\frac{1}{2}$ in. sq. in.</p> <p>(19) $27\frac{1}{8} + 38\% - 19\% - 29\% =$</p> <p>* (20) If 10 liters are equivalent to 2.64 gallons, estimate the cost of $16\frac{1}{8}$ gallons of gasoline at $8\frac{1}{2}$¢ a liter. \$.....</p> <p>(21) $255 \div 3\% =$</p> <p>(22) $6\% \times 75 =$</p> | <p>(23) $3\frac{1}{8} \times 3\frac{1}{8} =$</p> <p>(24) $3\frac{1}{8} \times 3\frac{1}{8} \times 3\frac{1}{8} =$</p> <p>(25) Find the cost of $22\frac{1}{2}$ liters of gasoline at 24¢ a liter. \$.....</p> <p>(26) Find the cost of $11\frac{1}{4}$ liters of gasoline at 12¢ a liter. \$.....</p> <p>(27) How many liters of gasoline can be bought for \$8.16 at $8\frac{1}{2}$¢ a liter? liters.</p> <p>(28) If 132 liters of gasoline cost \$8.58, find the cost per liter.¢.</p> <p>(29) If 100 lire are equivalent to 16¢, convert \$96 into lire.
..... lire.</p> <p>* (30) If 100 lire are equivalent to 16¢, convert \$38.40 into lire.
..... lire.</p> <p>(31) Of 607 girls in a school, 388 take mathematics, 287 take physics, and 149 take neither. How many take both?</p> <p>(32) How many take mathematics only?</p> <p>(33) How many take physics only?</p> <p>(34) How long does it take to cover 598 miles at 92 miles an hour?
..... hours.</p> <p>(35) Write in figures: seven and nine-sixteenths billion.</p> <p>(36) How far can you drive in 12 hours 24 minutes at 55 miles an hour? miles.</p> <p>(37) How fast must you drive in order to cover 286 miles in 4 hours 20 minutes? miles an hour.</p> <p>(38) How far can an airplane fly in six hours thirty minutes at 504 miles an hour? miles.</p> <p>(39) How long does it take an airplane to fly 3750 miles at 625 miles an hour? hours.</p> <p>* (40) How long will it take a rocket traveling 13,300 feet a second to cover 540,000 miles? hours.</p> <p>(41) $71\frac{1}{2} \div 2\frac{1}{8} =$</p> <p>(42) $214\frac{1}{2} \div 2\frac{1}{8} =$</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- (43) If car A costs 25% more than car B, and car B costs 24% more than car C, what per cent more does A cost than C?%.
- (44) If trunk A costs 25% less than trunk C and trunk B costs 25% more than trunk C, what per cent less does A cost than B? %.
- (45) $4\frac{1}{8}$ is what per cent less than $5\frac{1}{2}$? %.
- (46) 44 is what per cent more than $36\frac{2}{3}$? %.
- (47) $286 \div 4\frac{1}{8} =$
- (48) $112\frac{1}{2} \div 6\frac{1}{4} =$
- (49) $4\frac{1}{8}$ is what per cent of $5\frac{1}{2}$? %.
- * (50) 1026.999 is what per cent less than 1255.5? %.
- (51) $12 \times 28\frac{3}{4} =$
- (52) $12\frac{3}{4} \times 28 =$
- (53) $16 \times 28\frac{3}{8} =$
- (54) $2\frac{1}{2} \times 28\frac{3}{8} \times 16 =$
- (55) $4 \frac{4}{9} \times 2\frac{1}{4} =$
- (56) $8 \frac{8}{9} \times 1\frac{1}{8} \times 7\frac{1}{8} =$
- (57) $345 \div 28\frac{3}{4} =$
- (58) $1135 \div 28\frac{3}{8} =$
- (59) $454 \div 28\frac{3}{8} =$
- * (60) Estimate the cost of a rug of circumference 63 feet at \$6.75 a square yard. \$.....
- (61) If 600 pegs cost \$51, find the cost per thousand. \$.....
- (62) If 800 pegs cost \$68, find the cost per thousand. \$.....
- (63) If 1400 pegs cost \$119, find the cost per thousand. \$.....
- (64) If pegs cost \$85 a thousand, how many can be bought for \$102?
- (65) If pegs cost \$102 a thousand, find the cost of 350 pegs. \$.....
- (66) How many gallons of gasoline must be taxed at 9¢ a gallon to yield \$118,800 in revenue? gallons.
- (67) If the tax on twenty-six million gallons of gasoline is \$1,950,000, find the tax on ten thousand gallons. \$.....
- (68) Find the tax on thirteen and one-half million gallons of gasoline at $2 \frac{2}{9}$ ¢ a gallon. \$.....
- (69) A pair of dice is rolled. Find the probability that either 4, 7, or 10 will show.
- * (70) If one furlong is equivalent to 220 yards, a speed of 66 miles an hour is equivalent to how many furlongs an hour?
- (71) $(77 \times 31) + (19 \times 77) =$
- (72) $(63 \times 77) - (77 \times 42) =$
- (73) The square root of 841 is
- (74) The perimeter of a square is increased from 41 in. to 55 in. Find the corresponding increase in the area. sq. in.
- (75) The hypotenuse of a right triangle is 29 in. and the base is 21 in. Find the area. sq. in.
- (76) $6\frac{1}{4}$ is the square root of
- (77) A box contains six green balls and nine red balls. Two balls are taken at random from the box. Find the probability that one is green and one is red.
- (78) What is the probability that both balls are green?
- (79) What is the probability that both balls are red?
- * (80) Estimate the area of an equilateral triangle of perimeter 46 in. sq. in.

The University of Texas Interscholastic League

Number Sense Test, Series W-7

Contestant's Number.....

Contestant's Score.....

**Read Directions Carefully
Before Beginning Test**

**Do Not Unfold This Sheet
Until Told to Begin**

Directions: Do not turn this page until the person conducting the test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. ALL PROBLEMS ARE TO BE SOLVED MENTALLY. Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a star (*) require only approximate answers; any answer to a starred problem that is within five per cent of the exact answer will be scored correct; all other problems require exact answers.

Person conducting contest should explain these directions carefully to the contestants.

Stop—Wait for Signal

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(1) $1121 - 888 =$</p> <p>(2) $677 + 529 - 888 =$</p> <p>(3) $17 \times 22 =$</p> <p>(4) $17\frac{1}{2} \times 44 =$</p> <p>(5) $20 \times 33\frac{3}{8} =$</p> <p>(6) $18 \div 1\frac{1}{2} =$</p> <p>(7) $(44 \times 66) - (68 \times 33) =$</p> <p>(8) 14 is what per cent more than $11\frac{1}{2}$? %.</p> <p>(9) $12\frac{1}{4} - 9\frac{7}{8} + 7\frac{7}{8} - 8\frac{5}{8} =$</p> <p>* (10) Estimate the revenue obtainable by taxing 1,331,600 pounds of tobacco at $33\frac{1}{4}\text{¢}$ a pound. \$.....</p> <p>(11) If 12 steaks weighing 12 ounces each sell for \$32.40, find the equivalent selling price per pound. \$.....</p> <p>(12) If 10 liters are equivalent to 2.64 gallons, then $12\frac{1}{2}$ liters are equivalent to gallons.</p> <p>(13) $17\frac{1}{2}$ liters are equivalent to gallons.</p> <p>(14) 33 gallons are equivalent to liters.</p> <p>(15) Find the cost of 9.90 gallons of gasoline at 8¢ a liter. \$.....</p> <p>(16) $333\frac{3}{8} \div 66\% =$</p> <p>(17) Convert 8500 Mexican pesos into dollars at $12\frac{1}{2}$ pesos to the dollar. \$.....</p> <p>(18) If $12\frac{1}{2}$ pesos are equivalent to one dollar, find the cost in dollars of 33 gallons of gasoline that sells for one peso per liter. \$.....</p> <p>(19) Find the cost in pesos of 16 gallons of gasoline that sells for 34¢ a gallon. pesos.</p> <p>* (20) If a car travels 400.5 miles on 39 liters of gasoline, estimate the number of miles it travels per gallon.</p> <p>(21) How far can you drive in 7 hours 45 minutes at 44 miles an hour? miles.</p> <p>(22) How fast must you drive in order to cover 403 miles in 7 hours 45 minutes? miles an hour.</p> | <p>(23) How long does it take to cover 374 miles at 44 miles an hour? hours.</p> <p>(24) At what speed must you drive in order to cover 416 miles in $6\frac{1}{2}$ hours? miles an hour.</p> <p>(25) How far can you drive in 35 minutes at 36 miles an hour? miles.</p> <p>(26) Find the cost of fuel at 32¢ a gallon for a trip of 7 hours 40 minutes at 39 miles an hour in a car that gets 13 miles to the gallon. \$.....</p> <p>(27) How long can you drive at 56 miles an hour in a car getting 14 miles to the gallon on an expenditure of \$5.12 for fuel costing 32¢ a gallon? hours.</p> <p>(28) $341 \div 7\frac{1}{2} =$</p> <p>(29) How many liters of gasoline can be bought for \$6.82 at $7\frac{3}{4}\text{¢}$ a liter? liters.</p> <p>* (30) A rancher owning 1135 acres of land sells 363.2 acres. What per cent of his land does he retain? %.</p> <p>(31) If 88 liters of gasoline can be bought for \$7.04, what is the price per liter? ¢.</p> <p>(32) How many gallons of gasoline must be taxed at $10\frac{1}{2}\text{¢}$ a gallon to yield \$420,000 in revenue? gallons.</p> <p>(33) If the tax on 4,440,000 gallons of gasoline is \$488,400, find the tax on one thousand gallons. \$.....</p> <p>(34) Find the tax on $5\frac{1}{7}$ million gallons of gasoline at $10\frac{1}{2}\text{¢}$ a gallon. \$.....</p> <p>(35) Write in figures: fifteen and nine-sixteenths million.</p> <p>(36) $420 \div 10\frac{1}{2} =$</p> <p>(37) $10\frac{1}{2} \times 5\frac{1}{7} =$</p> <p>(38) $5\frac{1}{7} \times 2\frac{2}{8} \times 5\frac{1}{4} =$</p> <p>(39) $5\frac{1}{4} \times 13\frac{5}{7} =$</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- * (40) If 1313 pegs cost \$111.61, estimate the cost per thousand.
\$
- (41) $69 \div 5\frac{3}{4} =$
- (42) If 575 pegs cost \$69, find the cost per thousand. \$
- (43) $10\frac{1}{2}$ is what per cent of 70? %.
- (44) 2% is what per cent less than 4? %.
- (45) $\frac{1}{2}$ is what per cent more than $\frac{2}{3}$? %.
- (46) Truck C hauls 25% more than truck B, and truck B hauls 16% more than truck A. What per cent more does C haul than A?
..... %.
- (47) Of 731 boys in a school, 288 play football, 345 play tennis, and 242 play neither. How many play both tennis and football?
- (48) How many play one game only?
- (49) How many play football only?
- * (50) Estimate the circumference of a circle of area 15.916 sq. in.
..... in.
- (51) If 100 Italian lire are equivalent to 16¢ and one British pound is equivalent to \$2.80, convert 21,000 lire into pounds.
..... pounds.
- (52) Convert 20 pounds into lire. lire.
- (53) $(53 \times 41) - (62 \times 26\frac{1}{2}) =$
- (54) 9 is to 42 as is to 70.
- (55) 9 is to 42 as 21 is to
- (56) Subtract \$14.66 from \$30.12. \$
- (57) Subtract the sum of \$13.85 and \$9.79 from \$31.83. \$
- (58) Subtract \$14.68 from the sum of \$17.47 and \$12.67. \$
- (59) Subtract the sum of \$13.89 and \$9.75 from the sum of \$17.67 and \$12.47. \$
- * (60) If a trip which is usually made in 8 hours 35 minutes is made at a speed 35% faster than usual, how long will the trip take?
..... hours.
- (61) If a trip which is usually made in 16 hours is made at a speed $33\frac{1}{3}\%$ faster than usual, how long will the trip take?
..... hours.
- (62) If a trip which is usually made in 13 hours is made at a speed $33\frac{1}{3}\%$ slower than usual, how long will the trip take?
..... hours.
- (63) If two dice are tossed, what is the probability that neither 8 nor 2 will show?
- (64) Find the area of a trapezoid of altitude 19 in. and bases 19 in. and 29 in. sq. in.
- (65) Find the upper base of a trapezoid of lower base 25 in., altitude 23 in., and area 506 sq. in. in.
- (66) A car traveling $67\frac{1}{2}$ miles an hour is moving how many feet a second?
- (67) How long will it take a car traveling 45 miles an hour to cover 11,880 feet? minutes.
- (68) How long will it take a car traveling 52.8 feet a second to cover 54 miles? minutes.
- (69) Find the altitude of a trapezoid of bases 23 in. and 21 in. and area 396 sq. in. in.
- * (70) Estimate the area of an equilateral triangle of altitude 10 in.
..... sq. in.
- (71) Find the seventh term of the sequence $11\frac{7}{8}, 13\frac{1}{4}, 14\frac{5}{8}, 16, \dots$
.....
- (72) Two cards are taken at random from an ordinary deck of 52 playing cards. Find the probability that neither is a face card.
.....
- (73) The perimeter of a square is increased from $18\frac{1}{2}$ in. to $45\frac{1}{2}$ in. Find the corresponding increase in the area. sq. in.
- (74) Find the hypotenuse of a right triangle of altitude $4\frac{1}{2}$ in. and area $4\frac{1}{2}$ sq. in. in.
- (75) The square root of $182\frac{1}{4}$ is
- (76) The area of a square is decreased from $182\frac{1}{4}$ sq. in. to $156\frac{1}{4}$ sq. in. Find the corresponding decrease in the perimeter. in.
- (77) 12 is the cube root of what number?
- (78) A basket contains 10 red balls and 16 green balls. Three balls are taken at random from the basket. Find the probability that one is red and two are green.
- (79) An increase of 60 per cent in speed is accompanied by a decrease of per cent in time.
- * (80) The circumference of a circle is increased from $18\frac{1}{2}$ in. to $45\frac{1}{2}$ in. Estimate the corresponding increase in the area. sq. in.

The University of Texas Interscholastic League

Number Sense Test, Series W-8

Contestant's Number.....

Contestant's Score.....

**Read Directions Carefully
Before Beginning Test**

**Do Not Unfold This Sheet
Until Told to Begin**

Directions: Do not turn this page until the person conducting the test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. ALL PROBLEMS ARE TO BE SOLVED MENTALLY. Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a star (*) require only approximate answers; any answer to a starred problem that is within five per cent of the exact answer will be scored correct; all other problems require exact answers.

Person conducting contest should explain these directions carefully to the contestants.

Stop—Wait for Signal

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(1) $1132 - 778 =$</p> <p>(2) $846 + 778 - 1189 =$</p> <p>(3) $18 \times 23 =$</p> <p>(4) $18\frac{1}{2} \times 24 =$</p> <p>(5) $18 \times 24\frac{5}{9} =$</p> <p>(6) $12\frac{1}{2} \div 3\frac{1}{8} =$</p> <p>(7) $12\frac{1}{4} - 7\frac{7}{8} + 9\frac{9}{8} - 8\frac{7}{8} =$</p> <p>(8) $(44 \times 59) - (12 \times 177) =$</p> <p>(9) 44% is what per cent less than 56? %.</p> <p>* (10) Estimate the revenue obtainable by taxing 317,800 pints of alcohol at $128\frac{1}{2}\text{¢}$ a pint. \$.....</p> <p>(11) If twelve steaks weighing 14 ounces each sell for \$33.60, find the equivalent selling price per pound. \$.....</p> <p>(12) Convert 3412$\frac{1}{2}$ Mexican pesos into dollars at 12$\frac{1}{2}$ pesos to the dollar. \$.....</p> <p>(13) $666\frac{2}{3} \div 33\frac{1}{3} =$</p> <p>(14) $(64\frac{3}{4})^2 - (35\frac{1}{4})^2 =$</p> <p>(15) If 10 liters are equivalent to 2.64 gallons, then 22$\frac{1}{2}$ liters are equivalent to gallons.</p> <p>(16) 45 liters are equivalent to gallons.</p> <p>(17) 3.96 gallons are equivalent to liters.</p> <p>(18) If 12$\frac{1}{2}$ pesos are equivalent to one dollar, find the cost in dollars of 44 liters of gasoline that sells for 1.25 pesos per liter.
\$.....</p> <p>(19) Find the cost in dollars of 11.88 gallons of gasoline that sells for 1% pesos per liter. \$.....</p> <p>* (20) If a car travels 237.6 miles on 45 liters of gasoline, estimate the number of miles it travels per gallon.</p> <p>(21) How far can a plane fly in 13 hours 10 minutes at 216 miles an hour? miles.</p> | <p>(22) How long does it take to cover 644 miles at 56 miles an hour? hours.</p> <p>(23) How fast must you drive in order to cover 333 miles in 7 hours 24 minutes? miles an hour.</p> <p>(24) How far can you drive in 7 hours 40 minutes at 57 miles an hour? miles.</p> <p>(25) Find the cost of driving 333 miles at 45 miles an hour at a cost of \$1.10 an hour. \$.....</p> <p>(26) At what speed must you drive in order to cover 242$\frac{1}{4}$ miles in 4 hours 15 minutes? miles an hour.</p> <p>(27) Find the cost of 96 liters of gasoline at 6$\frac{3}{4}\text{¢}$ a liter. \$.....</p> <p>(28) If 95 liters of gasoline sell for \$6.65, find the cost of 105 liters. \$.....</p> <p>(29) How many liters of gasoline can be bought for \$7.80 at 7$\frac{1}{2}\text{¢}$ a liter? liters.</p> <p>* (30) If a farmer who owns 965 acres of land sells 212.3 acres, what per cent of his land does he retain? %.</p> <p>(31) Write in figures: nineteen and three-sixteenths billion.</p> <p>(32) Find the tax on 9$\frac{3}{4}$ million gallons of gasoline at 5$\frac{1}{8}\text{¢}$ a gallon. \$.....</p> <p>(33) If the tax on 1,110,000 gallons of gasoline is \$61,050, find the tax on one gallon. ¢.</p> <p>(34) How many gallons of gasoline must be taxed at 11$\frac{1}{2}\text{¢}$ a gallon in order to yield \$3220 in revenue? gallons.</p> <p>(35) $333 \div 7\% =$</p> <p>(36) $484\frac{1}{2} \div 8\frac{1}{2} =$</p> <p>(37) $5\frac{1}{8} \times 9\frac{3}{4} =$</p> <p>(38) If 350 pegs cost \$5.60, find the cost of ten thousand pegs. \$.....</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- (39) If pegs cost \$36 a thousand, how many can be bought for \$234?
..... pegs.
- * (40) If 7775 pegs cost \$622, estimate the cost per thousand.
\$
- (41) 2% is what per cent of $10\frac{1}{2}\%$? %.
- (42) $7\frac{7}{8}$ is what per cent less than $10\frac{1}{2}$? %.
- (43) 11 is what per cent more than 8% ? %.
- (44) Trunk A holds 50% more than trunk C; trunk B holds 30% less than trunk A. What per cent more does B hold than C?
..... %.
- (45) $(54 \times 51) - (33 \times 34) =$
- (46) Subtract \$24.77 from \$42.15. \$
- (47) Of 551 students in a school, 388 take mathematics, 168 take physics, and 138 take neither. How many take both?
- (48) How many take mathematics only?
- (49) How many take only one of the two subjects?
- * (50) Estimate the cost of a circular rug of circumference 51 feet at \$7.25 a square yard. \$
- (51) If 100 Italian lire are equivalent to 16¢ and one British pound is equivalent to \$2.80, convert 2¢ pounds into lire. lire.
- (52) Convert 5250 lire into pounds. pounds.
- (53) 8% is what per cent less than 11? %.
- (54) 8% is to 11 as is to 20.
- (55) Subtract the sum of \$58.77 and \$48.86 from \$121.21. \$
- (56) Subtract \$107.68 from the sum of \$67.67 and \$53.54. \$
- (57) Subtract the sum of \$47.77 and \$59.86 from the sum of \$54.67 and \$66.54. \$
- (58) $9\frac{3}{4} \times 1\frac{1}{4} \times 5\frac{1}{8} =$
- (59) $10\% \times 4\frac{7}{8} \times 1\frac{1}{4} =$
- * (60) If a trip which is usually made in $16\frac{3}{8}$ hours is made at a speed 28% slower than usual, how long will the trip take?
..... hours.
- (61) If a trip which is usually made in 8 hours 24 minutes is made at a speed of 40% faster than usual, how long will the trip take?
..... hours.
- (62) What per cent slower must you drive in order to make a trip in $7\frac{1}{2}$ hour that usually takes 6 hours? %.
- (63) If two dice are rolled, find the probability that neither 4 nor 6 shows.
- (64) A projectile traveling 2250 miles an hour is moving how many feet a second?
- (65) A car traveling 110 feet a second is moving how many miles an hour?
- (66) How long does it take a car traveling 57.2 feet a second to cover 312 miles? hours.
- (67) How long does it take a car traveling 50 miles an hour to cover 220 feet? seconds.
- (68) Find the area of a trapezoid of altitude $8\frac{3}{4}$ in. and bases $38\frac{3}{8}$ in. and $25\frac{5}{8}$ in. sq. in.
- (69) A trapezoid has an area of 280 sq. in. and bases of $37\frac{7}{8}$ in. and $26\frac{3}{8}$ in. Find the altitude. in.
- * (70) Estimate the area of an equilateral triangle of altitude 17.321 in. sq. in.
- (71) The hypotenuse of a right triangle is 1.3 in. and the base is 0.5 in. Find the perimeter. in.
- (72) Find the area. sq. in.
- (73) The square root of $420\frac{1}{4}$ is
- (74) The perimeter of a square is increased from $36\frac{3}{4}$ in. to $43\frac{1}{4}$ in. Find the corresponding increase in the area. sq. in.
- (75) A basket contains 5 red balls and 5 green balls. Three balls are taken at random from the basket. Find the probability that all three are red.
- (76) Find the probability that two of the balls are of one color and the third ball of the other color.
- (77) Find the seventh term of the sequence $8\frac{1}{2}$, $12\frac{1}{4}$, 16, $19\frac{3}{4}$, . . .
.....
- (78) The area of a square is increased from $156\frac{1}{4}$ sq. in. to $210\frac{1}{4}$ sq. in. Find the corresponding increase in the perimeter. in.
- (79) Find the area of a square of diagonal 29 in. sq. in.
- * (80) Estimate the number of revolutions of a wheel of diameter 24 in. in rolling $12\frac{1}{2}$ miles.