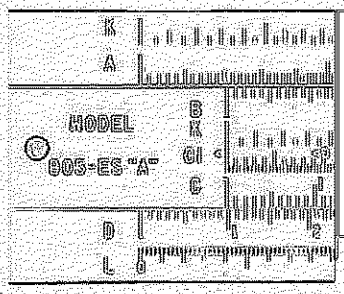
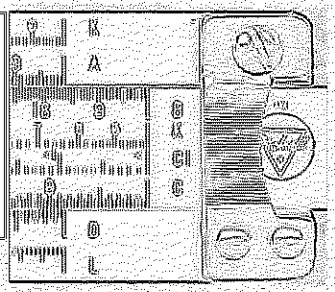
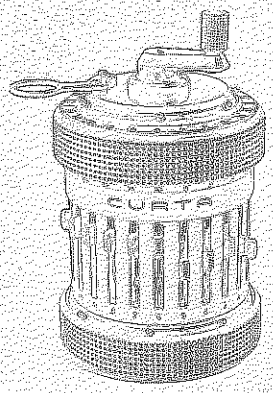
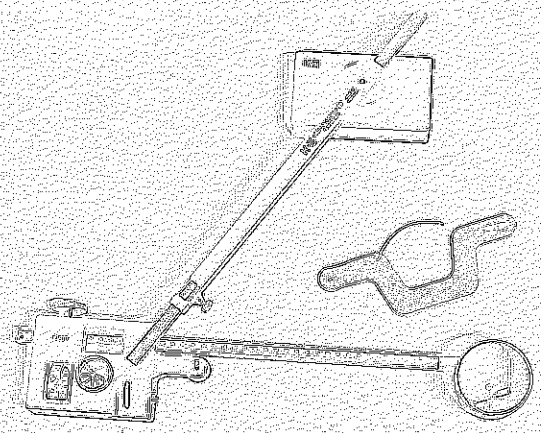


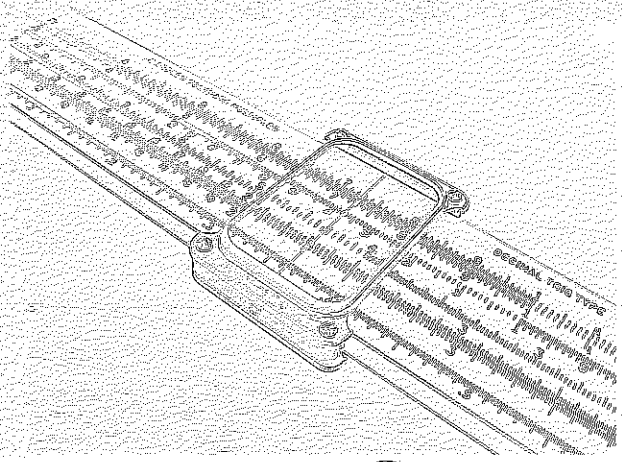
Texas Competitive Mathematics
Web - http://www.texasmath.org
Fax - (206) 666-MATH/(206) 666-6284
E-Mail - webmaster@texasmath.org

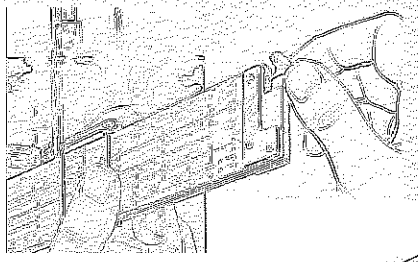


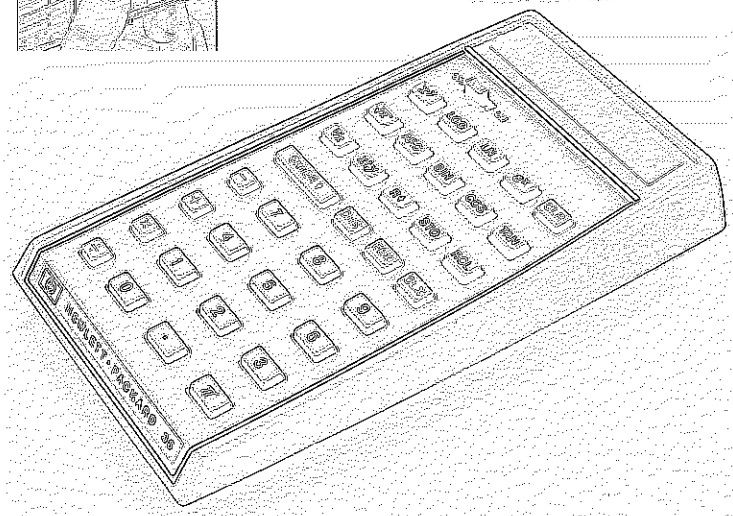
1961-62 UIL Number Sense
(18 pages)

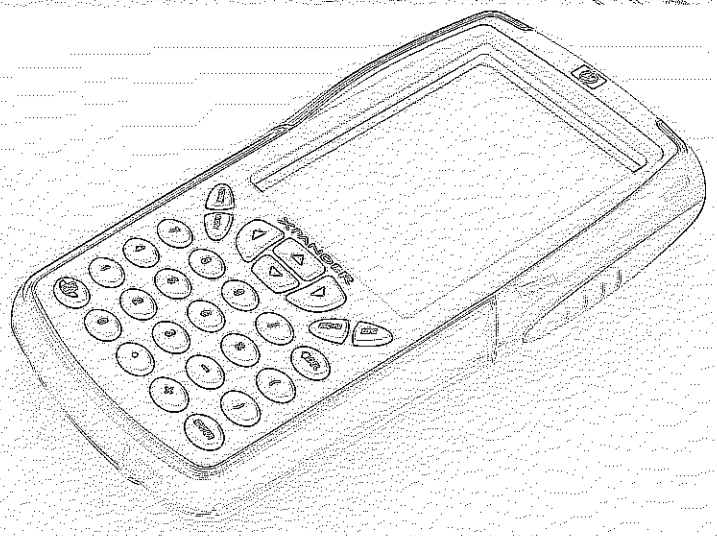


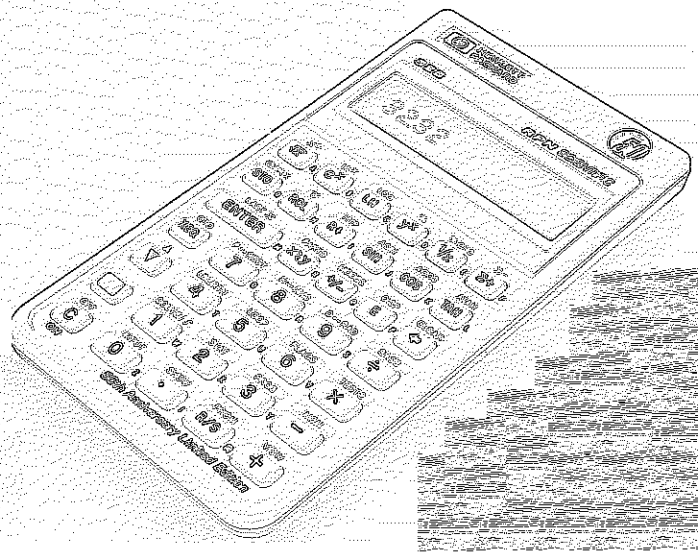


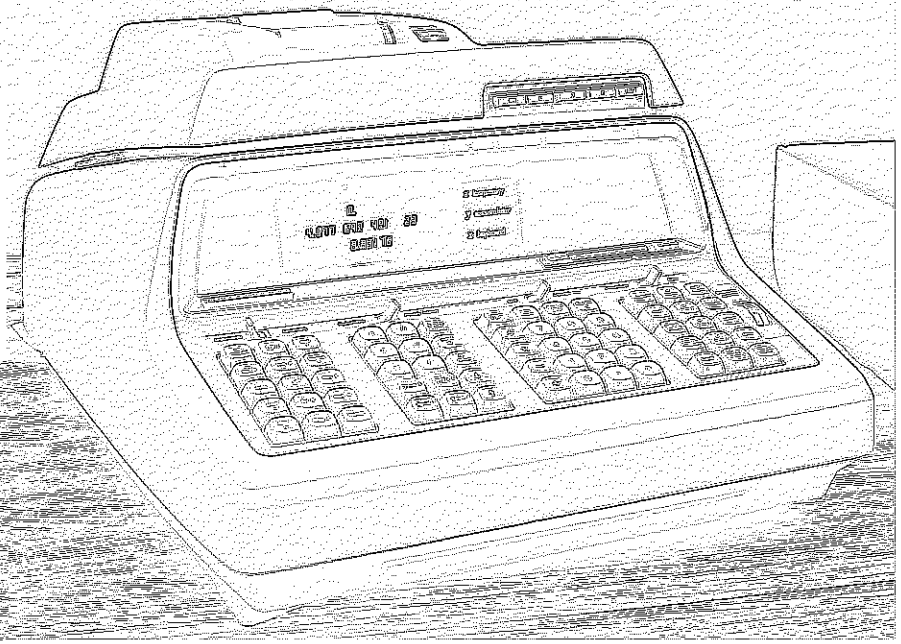












The University of Texas Interscholastic League

Number Sense Test, Series U-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

(1) 78+38= .....

(2) 113—67= .....

(3) ¾ + ⅝ = ...

(4) 18×11= .....

(5) 25÷6¼ = ...

(6) 35+56+48= .....

(7) 241—88+47= .....

(8) 196÷14= .....

(9) 1⅝×⅘= .....

*(10) Estimate the cost of 1835 board feet of lumber at 32¢ a board foot. $.....

(11) 18 feet = ...inches.

(12) 228 inches = ...feet.

(13) Find the sum of $7.88, $4.65, and $2.12. $.....

(14) Find the interest on $76 for one year at 5½%.

$.....

(15) Find the average of 35, 56, 48, and 137. .....

(16) Subtract $48.64 from $61.12. $.....

(17) 9 1/3—4 5/6+13 1/6= .....

(18) Find the area of a parallelogram of base 17 inches and altitude 12 inches. ..... sq. in.

(19) Find the area of a triangle of altitude 17 inches and base 12 inches. .....sq. in.

*(20) 1702÷23= .....

(21) 8⅓×48= .....

(22) 400÷8⅓= .....

(23) Write in figures: seventy eight and five-eighths million.

.....

(24) One-half of 19½= .....

(25) One-fourth of 19½= .....

(26) Three-fourths of 19½= .....

(27) Three-eighths of 19½= .....

(28) Find the sixth term of the sequence 7½, 11, 14½, 18, ...

.....

(29) A box contains 15 apples and 15 oranges. A piece of fruit is taken from the box at random. What is the probability that it is an apple? .....

*(30) Convert 1000 kilometers into miles, assuming that one mile equals 1.61 kilometers. .....miles.

(31) 25×76= .....

(32) 75×76= .....

(33) 50×76= .....

(34) 12½×76= .....

(35) 25×38= .....

(36) 3800÷76= .....

(37) 85÷1¼ = ...

(38) 84÷1¾ = ...

(39) 58½÷2¼ = ...

*(40) Convert 1000 square kilometers into square miles, assuming that one square mile equals 2.592 square kilometers.

..... sq. mi.

(41) Find the cost of 14 gallons of gas at 31¢ a gallon.

$.....

(42) Find the cost of 16 gallons of gas at 31¢ a gallon.

$.....

(43) Find the cost of 14 gallons of gas at 33½¢ a gallon.

$.....

(44) Find the cost of 15¼ gallons of gas at 32¢ a gallon.

$.....

(45) 21½—8¾ = ...

(46) 8⅜+18¾ = ...

(47) 21½—3⅞—8¾ = ...

(48) Find the sum of $11.88, $19.12, and $24.79.

$.....

(49) Subtract \$18.69 from the sum of \$14.47 and \$15.59.

\$.....

*(50) A man has a sum of money invested at 4½% a year. If his annual interest is \$354.78, find the amount of his investment.

\$.....

(51) 4/9 is what per cent less than 2/3? .....%.

(52) 2/3 is what per cent more than 4/9? .....%.

(53) 4/9 is what per cent of 2/3? .....%.

(54) 4/9 is eight-ninths of what number? .....

(55) 35:63 = 45: ? .....

(56) A sum of money was deposited a year ago in a savings account that pays 4% annually. The account now contains \$312. How much was deposited? \$.....

(57) \$100 is deposited in a savings account that pays 4% compounded annually. How much will the fund contain two years from now?

\$.....

(58) Find the tax on a new car costing \$2870 if the tax rate is 1½%.

\$.....

(59) If the tax on a new car costing \$4300 is \$172, find the tax rate.

.....%.

*(60) 1978÷43= .....

(61) 87×1⅜= .....

(62) 87×2⅓= .....

(63) (87×1⅓) + (87×2⅜) = ...

(64) (87×2⅜) − (87×1⅓) = ...

(65) (87×2⅓) − (87×1⅜) = ...

(66) 203÷2⅓= .....

(67) 145÷1⅜= .....

(68) 116÷1⅓= .....

(69) 406÷4⅜= .....

*(70) A speed of 2295 miles an hour is equivalent to how many feet a second? .....

(71) How many numbers between 50 and 225 are divisible by 8?

.....

(72) What is the smallest number greater than 7 that 539 is divisible by? .....

(73) An employee receives a 5% increase in wages and now earns \$126 a week. How much did he earn before the increase?

\$.....

(74) 12,600÷105= .....

(75) A bag contains 8 white balls, 9 red balls, and 7 green balls. A ball is taken at random from the bag. Find the probability that the ball is red. .....

(76) What is the square root of 30¼ ? .....

(77) The perimeter of a square is decreased from 60 inches to 52 inches. Find the corresponding decrease in the area.

..... sq. in.

(78) The area of a square is increased from 324 sq. inches to 441 sq. inches. Find the corresponding increase in the perimeter.

..... in.

(79) Find the eighth term of the sequence 27, 23½, 20, 16½, ...

.....

*(80) Estimate the radius of a circle of circumference 31 inches.

..... in.

The University of Texas Interscholastic League

Number Sense Test, Series U-2

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

(1) 48+79= .....

(2) 113—66= .....

(3) 115+87—68= .....

(4) 18×9= .....

(5) 18×9½= .....

(6) 18×9¼= .....

(7) 208÷13= .....

(8) The area of a square is 324 sq. inches. Find the length of a side.

..... in.

(9) Find the area of a triangle of altitude 18 inches and base 18½ inches. ..... sq. in.

*(10) Estimate the value of 538 pounds of pecans at 79¢ a pound.

$.....

(11) 27 square yards = ... sq. ft.

(12) Find the sum of $1.45, $11.86, and $8.19.

$.....

(13) Find the interest on $3700 for 6 months at a rate of 7% a year.

$.....

(14) 171÷9½= .....

(15) 342÷19= .....

(16) Find the cost of 15 gallons of gas at 36¢ a gallon.

$.....

(17) Find the cost of 15 gallons of gas at 38¢ a gallon.

$.....

(18) Find the cost of 17 gallons of gas at 36¢ a gallon.

$.....

(19) Find the cost of 15 gallons of gas at 38.6¢ a gallon.

$.....

*(20) Estimate the cost of 217,000 gallons of gas at 27.9¢ a gallon.

$.....

(21) 25×27= .....

(22) 25×27½= .....

(23) 25½×27= .....

(24) 25½×27½= .....

(25) 255×275= .....

(26) (25×27) + (25×27½)= .....

(27) (25×27) + (12½×55)= .....

(28) (25½×27½) — (25½×27)= .....

(29) 178.23+146.77= .....

*(30) Subtract the sum of $283.69 and $529.77 from the sum of $277.23 and $618.66. $.....

(31) 35½—18¾= .....

(32) 35½—9⅞—18¾= .....

(33) 34½+9⅞—17¾= .....

(34) 62½% of $3224 = $.....

(35) Write in figures: twenty and five-eighths billion.

.....

(36) 4⅜ is what per cent less than 6¼? .....

(37) 8⅝ is what per cent more than 6¼? .....

(38) Convert 6,250 pesos into dollars, assuming that 12½ pesos are equivalent to one dollar. $.....

(39) Divide four billion by four hundred thousand.

.....

*(40) Estimate the tax revenue obtainable from two and three-eighths million gallons of gasoline at 7⅝¢ a gallon.

$.....

(41) A bank account contains $413.12. $185.87 is withdrawn. How much remains? $.....

(42) A checking account contains $413.12. Checks for $87.45 and $98.44 are written. Find the balance remaining in the account.

$.....

(43) A checking account contains \$413.12. \$185.87 is deposited into the account. Then checks for \$197.45 and \$88.44 are written. Find the balance. \$.....

(44) One-fourth mile = ...feet.

(45) Two and one-half miles = ...feet.

(46) $1.05 \times 420 =$ .....

(47) $420 \times .95 =$ .....

(48) An employee receives a 5% increase in salary and now earns \$441 a month. How much did he earn before the raise?

\$.....

(49) An employee receives a 5% decrease in salary and now earns \$399 a month. How much did he earn before the cut?

\$.....

*(50) An employee receives a 7½% increase in salary and now earns \$946 a month. How much did he earn before the raise?

\$.....

(51) $7\frac{1}{2} \times 56 =$ .....

(52) $7\frac{1}{4} \times 56 =$ .....

(53) $7\frac{3}{4} \times 56 =$ .....

(54) $7\frac{1}{2} \times 56\frac{1}{2} =$ .....

(55) $7\frac{1}{2} \times 56\frac{1}{4} =$ .....

(56) How fast should you drive in order to cover 25 miles in 25 minutes?

..... m.p.h.

(57) How fast should you drive in order to cover 20 miles in 25 minutes?

..... m.p.h.

(58) How many miles can you cover in $7\frac{3}{4}$ hours at 56 miles per hour?

..... mi.

(59) How long will it take you to cover 420 miles at 56 miles per hour?

..... hrs.

*(60) How long does it take to travel 437 miles at 46 miles per hour?

..... hrs.

(61) $212 - 177 - 19 + 88 =$ .....

(62) $8.80 - 1.9 + 21.2 - 17.7 =$ .....

(63) Find the sixth term of the sequence $8\frac{1}{8}, 9\frac{7}{8}, 11\frac{5}{8}, 13\frac{3}{8}, \ldots$.

.....

(64) Find the tax on 150 million gallons of gasoline at 5½¢ a gallon.

\$.....

(65) The tax on 140 million gallons of gasoline is \$6,300,000. Find the tax on one gallon. .....¢.

(66) 5% of \$41,720 = \$.....

(67) 7½% of \$41,720 = \$.....

(68) 12½% of \$41,720 = \$.....

(69) 37½% of \$41,720 = \$.....

*(70) A speed of 3210 miles an hour is equivalent to how many feet a second? .....feet per second.

(71) How many numbers between 200 and 500 are divisible by 11?

.....

(72) A bag contains 13 white balls, 15 red balls, and 11 green balls. A ball is taken at random from the bag. Find the probability that it is white. .....

(73) The perimeter of a square is increased from 17½ inches to 21½ inches Find the corresponding increase in the area.

..... sq. in.

(74) A card is taken at random from a standard 52-card deck. Find the probability that it is either a seven or a nine.

.....

(75) The legs of a right triangle are 2.4 inches and 3.2 inches in length. Find the length of the hypotenuse. .....in.

(76) $8^3 - 5^3 =$ .....

(77) Given $382 \times 38 = 14{,}516$. Find 379×38. .....

(78) Given $5966 \div 38 = 157$. Find $5966 \div 9\frac{1}{2}$. .....

(79) Given $15{,}318 \div 69 = 222$. Find 444×69. .....

*(80) Estimate the area of a circle of circumference 26.4 inches.

The University of Texas Interscholastic League

Number Sense Test, Series U-3

Contestant's Number ..... Contestant's Score .....

Read Directions Carefully Before Beginning Test

Do Not Unfold This Sheet Until Told to Begin

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Stop—Wait for Signal

(1) $68+119=$ .....

(2) $222-88=$ .....

(3) $511-238-118=$ .....

(4) Find the cost of 5⅛ lb. of steak at 69¢ a pound.

$ .....

(5) One-half of $63\frac{1}{2}=$ .....

(6) $84\div 1\frac{1}{2}=$ .....

(7) 36 is what per cent of 450? .....

(8) $8\frac{3}{8}+18\frac{3}{4}=$ .....

(9) $31\frac{3}{8}-25\frac{5}{8}=$ .....

*(10) Estimate the value of 8725 barrels of oil at $3.18 a barrel.

$ .....

(11) 8% of 450 = ...

(12) 5% of 450 = ...

(13) 6½% of 450 = ...

(14) The sum of $7.49, $9.69, and $8.88 is $ .....

(15) Subtract $9.69 from $26.06. $ .....

(16) Subtract the sum of $8.89 and $9.68 from $26.04.

$ .....

(17) Find the area of a triangle of base 21 inches and altitude 26 inches.

..... sq. in.

(18) Find the interest on $5200 for one year at $4\frac{1}{4}$ %.

$ .....

(19) Find the altitude of a triangle of base 10½ inches and area 273 sq. in. ..... in.

*(20) $2279\div 53=$ .....

(21) $273\div 5\frac{1}{4}=$ .....

(22) If the interest on $5200 for one year is $273, what is the annual rate of interest? ..... %.

(23) $5\frac{3}{4}\times 52=$ .....

(24) $5\frac{3}{8}\times 52=$ .....

(25) $5\frac{7}{8}\times 52=$ .....

(26) $5\frac{1}{2}\times 52\frac{1}{2}=$ .....

(27) $(5\frac{3}{8}\times 52)+(5\frac{7}{8}\times 52)=$ .....

(28) $(5\frac{7}{8}\times 52)-(5\frac{1}{2}\times 52)=$ .....

(29) $5\frac{1}{2}\times 26\frac{1}{4}=$ .....

*(30) If 4325 bushels of corn sell for $7871.50, estimate the price per bushel. $ .....

(31) 7½% of 28 = ...

(32) 12½% of 28 = ...

(33) 18% of 28 = ...

(34) 5½% of 28 = ...

(35) 11½% of 28 = ...

(36) $504\div 18=$ .....

(37) ⅛ is what per cent more than 1/10? ..... %.

(38) $80\div 3\frac{1}{3}=$ .....

(39) $98\div 4\frac{2}{3}=$ .....

*(40) If 500 Indonesian rupiahs equal 43 dollars, how many rupiahs equal 1135.2 dollars? .....

(41) 1/10 is what per cent less than ⅛ ? ..... %.

(42) If 9500 pegs cost $24.70, find the cost per thousand.

$ .....

(43) Find the cost of 18 dozen eggs at 28¢ a dozen.

$ .....

(44) Find the cost of $18\frac{3}{4}$ dozen eggs at 28¢ a dozen.

$ .....

(45) Find the cost of 19 dozen eggs at 28¢ a dozen.

$ .....

(46) Find the cost of 18 dozen eggs at 27¢ a dozen.

$ .....

(47) Find the cost of 19½ dozen eggs at 26¢ a dozen.

$.....

(48) 42 is what per cent more than 35? .....%.

(49) 10½ is what per cent more than 8¾ ? .....%.

*(50) 140.76 is what per cent less than 234.60? .....%.

(51) How fast must you drive in order to cover 30 miles in 25 minutes?

..... m.p.h.

(52) How far can one travel in 18 hours and 45 minutes at 28 miles an hour? ..... mi.

(53) How long will it take to travel 486 miles at 27 miles an hour?

..... hrs.

(54) $22\times22=$ .....

(55) $22\times22\frac{1}{2}=$ .....

(56) $22\frac{1}{2}\times22\frac{1}{2}=$ .....

(57) $22\frac{1}{4}\times22=$ .....

(58) $495\div22\frac{1}{2}=$ .....

(59) $484\div5\frac{1}{2}=$ .....

*(60) Estimate the circumference of a circle of radius 38½ inches.

..... in.

(61) Find the tax on 220 million gallons of gasoline at 5½¢ a gallon.

$.....

(62) If the tax on 175 million gallons of gasoline is $10,500,000, find the tax on one gallon. .....¢.

(63) If an employee receives a 5% increase in salary and now earns $525 a month how much did he earn before the raise?

$.....

(64) If an employee receives a 6% decrease in salary and now earns $282 a month, how much did he earn before the cut?

$.....

(65) If an employee receiving $750 a month is raised to a position paying $795 a month, by what per cent is his salary increased?

.....%.

(66) John has $327.30 on deposit in a savings bank. He withdraws $88.50 and later deposits $69.70. Find his balance. $.....

(67) If a stick of smoked sausage weighing 4/7 oz. sells for 8¢, find the equivalent selling price per pound. $.....

(68) If one pound of smoked sausage is worth $2.88, find the value of 5/9 oz. .....¢.

(69) If the tax on gasoline is 4½¢ a gallon, how many gallons must be taxed in order to yield $3780 in revenue? .....

*(70) A man borrowed $2555 and a year later repaid $2657.20. At what rate did he pay interest? .....%.

(71) A speed of 90 miles an hour is equivalent to how many feet a second? .....feet per second.

(72) Find the smallest number greater than 3 that 582 is divisible by.

.....

(73) A card is drawn at random from an ordinary deck of 52 cards. Find the probability that it is a club or a queen.

.....

(74) The square root of 7 1/9 is .....

(75) A ball is taken at random from a bag that contains 8 white balls, 8 red balls, and 12 green balls. Find the probability that the ball is red. .....

(76) If the perimeter of a square is increased from 12¼ inches to 16¼ inches, what is the corresponding increase in the area?

..... sq. in.

(77) $56^2-54^2=$ .....

(78) The hypotenuse of a right triangle is 30 inches, and the altitude is 24 inches. Find the base. .....in.

(79) $37\frac{1}{2}\%$ of $61\frac{1}{2}=$ .....

*(80) Estimate the length of the diagonal of a square of side 16 inches.

..... in.

The University of Texas Interscholastic League
Number Sense Test, Series U-4

Contestant's Number..... Contestant's Score.....

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Stop—Wait for Signal

(1) $44+79=$ .....

(2) $115-68=$ .....

(3) $233-18-85=$ .....

(4) $15\times18=$ .....

(5) $25\times18=$ .....

(6) $210\div14=$ .....

(7) $18\times15\frac{1}{2}=$ .....

(8) $84\div4\frac{2}{3}=$ .....

(9) $24\frac{3}{4}-15\frac{7}{8}=$ .....

*(10) If one square mile contains 640 acres, estimate the number of square miles in 10,000 acres. .....sq. mi.

(11) $168\div2\frac{1}{3}=$ .....

(12) Subtract $6.76 from $11.22. $.....

(13) How many shirts at $2.75 each can be bought for $22?

.....

(14) Find the area of a triangle of base 31 inches and altitude 18 inches. ..... sq. in.

(15) $81\div2\frac{1}{4}=$ .....

(16) $83\frac{1}{4}\div2\frac{1}{4}=$ .....

(17) $40\frac{1}{2}\div2\frac{1}{4}=$ .....

(18) $40\frac{1}{2}\div4\frac{1}{2}=$ .....

(19) $(20\frac{1}{4}\div2\frac{1}{4})+(60\frac{3}{4}\div2\frac{1}{4})=$ .....

*(20) $1478-888+1889+175-677=$ .....

(21) Find the area of a triangle of altitude 33 inches and base 18 inches.

..... sq. in.

(22) $738\div18=$ .....

(23) Find the base of a triangle of altitude 36 inches and area 738 square inches. ..... in.

(24) Find the cost of 15 gallons of gas at 54¢ a gallon.

$.....

(25) Find the cost of 15 gallons of gas at 56¢ a gallon.

$.....

(26) Find the cost of 17 gallons of gas at 54¢ a gallon.

$.....

(27) Find the cost of 15 gallons of gas at 54.8¢ a gallon.

$.....

(28) Find the cost of 18 gallons of gas at 54.5¢ a gallon.

$.....

(29) How many gallons of gas can be bought for $9.72 at 54¢ a gallon?

.....

*(30) 39% of $2277 = $.....

(31) 95 is five-eighths of what number? .....

(32) 18 is what per cent more than 15? .....%.

(33) $9\frac{3}{4}$ is what per cent less than $19\frac{1}{2}$? .....%.

(34) $4\frac{7}{8}$ is what per cent less than $19\frac{1}{2}$? .....%.

(35) 39 is what per cent of 156? .....%.

(36) If the first volume of a set of reference books sells for 29¢ and each of the remaining 24 volumes for 99¢, find the cost of the entire set. $.....

(37) $6\times2\frac{2}{3}=$ .....

(38) $6\frac{1}{2}\times2\frac{2}{3}=$ .....

(39) If one English pound is equivalent to $2.80, find the cost in dollars of a Rolls Royce car priced at 6500 pounds.

$.....

*(40) How many English pounds are equivalent to $11,760?

.....

(41) Write in figures: Eleven and seven-eighths million.

.....

(42) Find the average of $68\frac{3}{8}$, 46, $43\frac{1}{2}$, and $42\frac{1}{8}$.

.....

(43) How many millions in eleven and seven-eighths billion?

.....

(44) If sheets sell for $3.28 each or four for $12.52, how much is saved by buying four? ..... ¢.

(45) Find the tax on a house valued at $6500 if the tax rate is 2.8%.

$.....

(46) 17×71= .....

(47) If 4250 pegs cost $12.07, find the cost per thousand.

$.....

(48) 32 : 72 = 1 : ? .....

(49) How many acres of land can be bought for $18,200 at $280 an acre? .....

*(50) If a rocket travels 12,600 miles in 2 hours and 48 minutes, how many feet does it move in one second? ..... ft.

(51) 52×52= .....

(52) 51×52= .....

(53) 26×52= .....

(54) 17×26= .....

(55) 2704÷26= .....

(56) 2652÷17= .....

(57) (51×52) + (52×52) = ...

(58) At 52 miles an hour, how long will it take to travel 1352 miles?

..... hrs.

(59) How far can one travel in 17 hours at 52 miles an hour?

..... mi.

*(60) At what rate should one travel in order to cover 3016 miles in 52 hours? ..... m.p.h.

(61) If a person receives a 5% increase in salary and now earns $735 a month, how much did he earn before the raise?

$.....

(62) An employee earns $640 a month and receives a 5% increase in salary. How much does he now earn? $.....

(63) An employee receives a 5% decrease in salary and now earns $608 a month. How much did he earn before the cut?

$.....

(64) Compute the tax on 375,000 gallons of gas at 8¢ a gallon.

$.....

(65) If the tax on 875,000 gallons of gas is $105,000, find the tax on one gallon. ..... ¢.

(66) 608÷19= .....

(67) 608÷19/20= .....

(68) 608÷0.95= .....

(69) 735÷1 1/20= .....

*(70) 63¾ % of 3978 = ...

(71) The square root of 289 is .....

(72) Find the hypotenuse of a right triangle whose legs are 7 inches and 24 inches. .....

(73) A speed of 255 miles an hour is equivalent to how many feet a second? ..... ft. per second.

(74) The perimeter of a square is increased from 18 inches to 34 inches. Find the corresponding increase in the area.

..... sq. in.

(75) Find the smallest number greater than 3 that 261 is divisible by.

.....

(76) A card is drawn at random from an ordinary deck of 52 playing cards. Find the probability that it is a queen or a spade.

.....

(77) Two dice are rolled. Find the probability of rolling a twelve.

.....

(78) $38^2 - 35^2$ = ...

(79) $12^3 - 11^3$ = ...

*(80) Estimate the area of a circle of circumference 32 inches.

..... sq. in.

The University of Texas Interscholastic League

Number Sense Test, Series U-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

(1) 58¢+46¢+78¢= $.....

(2) 78¢+46¢—58¢= .....¢.

(3) 15×18= .....

(4) 15⅔×18= .....

(5) $7.65+$18.75= $.....

(6) $8.65+$17.75—$18.85= $.....

(7) 270÷18= .....

(8) (16×17) — (15×18) = ...

(9) 5% of $2760 = $.....

*(10) Estimate the cost of 12,775 feet of barbed wire at 1⅝¢ a foot. $.....

(11) 225÷12½= .....

(12) 8/9 is what per cent of 2 7/9? .....%.

(13) 2⅞ is what per cent less than 3⅛ ? .....%.

(14) 22⅝—17⅞+3¾ = ...

(15) 10½% of 640 = ...

(16) 21% of 640 = ...

(17) 5¼% of 640 = ...

(18) Find the area of a rectangle of base 15 inches and altitude 18⅔ inches. ..... sq. in.

(19) Find the altitude of a triangle of area 282 square inches and base 31⅓ inches. ..... in.

*(20) If the tax on a house valued at $18,375 is $505.31, estimate the tax rate. .....%.

(21) 405÷11¼ = ...

(22) 202½÷22½= .....

(23) 810÷5⅝ = ...

(24) Find the cost of 15 gallons of gas at 19¢ a gallon. $.....

(25) Find the cost of 15 gallons of gas at 17¢ a gallon. $.....

(26) Find the cost of 17 gallons of gas at 19¢ a gallon. $.....

(27) Find the cost of 15 gallons of gas at 19.6¢ a gallon. $.....

(28) Convert 8750 Italian lire into dollars, assuming that 100 lire are equivalent to 16¢. $.....

(29) Convert $20 into lire. .....lire.

*(30) Convert 28,125 lire into dollars. $.....

(31) Find the value in dollars of 625 lire. $.....

(32) Write in figures: three and three-sixteenths million. .....

(33) 87½÷62½= .....

(34) 37½÷⅛= .....

(35) 87½ billion divided by 62½ million = ...

(36) 25×96= .....

(37) 75×92= .....

(38) 87½÷31¼ = ...

(39) 480÷19⅛= .....

*(40) A rocket moves 14,475 miles an hour. How many feet does it move in a second? .....ft.

(41) $72.31—$47.65 = $.....

(42) Subtract the sum of $24.18 and $23.49 from $72.33. $.....

(43) Subtract $47.68 from the sum of $38.89 and $33.42. $.....

(44) Subtract the sum of $29.19 and $18.43 from the sum of $35.38 and $36.96. $.....

(45) Find the number halfway between 247 and 723. .....

(46) Trunk A holds 20% more than trunk B, and trunk B holds 15% more than trunk C. What per cent more does A hold than C? .....%.

(47) The dimensions of rectangle A are 18 × 24 inches and of rectangle B 18 × 30 inches. The area of A is what per cent less than that of B? .....%.

(48) The area of rectangle B is what per cent greater than that of rectangle A? ..... %.

(49) The perimeter of rectangle A is what per cent less than that of rectangle B? ..... %.

*(50) The circumference of a circle is increased by 33 inches. Estimate the corresponding increase in the radius. ..... in.

(51) $19 \times 19 =$ .....

(52) $19 \times 19\frac{1}{2} =$ .....

(53) $19\frac{1}{2} \times 19\frac{1}{2} =$ .....

(54) $1\frac{1}{2} \times 37\frac{1}{2} =$ .....

(55) $7\frac{1}{2} \times 7\frac{1}{2} =$ .....

(56) The base of a rectangle is 18 inches, and a diagonal is $19\frac{1}{2}$ inches. Find the perimeter. ..... in.

(57) $(15\frac{1}{2} \times 15\frac{1}{2}) - (14\frac{1}{2} \times 14\frac{1}{2}) =$ .....

(58) $(8\frac{3}{4} \times 8\frac{3}{4}) - (6\frac{3}{4} \times 6\frac{3}{4}) =$ .....

(59) $(3\frac{5}{8} \times 13\frac{1}{2}) + (27 \times 3\frac{5}{18}) =$ .....

*(60) Estimate the number of revolutions of a wheel of diameter 24 inches in rolling 5 miles. .....

(61) If 6250 pegs cost $25.00, find the cost per thousand.
$.....

(62) One-sixth of a mile = ... ft.

(63) One-twelfth of a mile = ... ft.

(64) 5/24 of a mile = ... ft.

(65) Three-tenths of a mile = ... ft.

(66) Find the tax on 19 million gallons of gas at $19\frac{1}{2}$¢ a gallon.
$.....

(67) If the tax on $7\frac{1}{2}$ million gallons of gas is $562,500, find the tax on one gallon. ..... ¢.

(68) Find the interest on $37,500 for one year at a rate of $1\frac{1}{2}$%.
$.....

(69) Two dice are rolled. Find the probability of rolling a nine.
.....

*(70) A rectangular lot is 5/24 of a mile wide by 3/10 of a mile long. How many square yards does it contain?
..... sq. yds.

(71) $854 \div 14 =$ .....

(72) $(45 \times 81) - (135 \times 27) =$ .....

(73) A box contains 15 white balls, 13 red balls, and 11 green balls. A ball is taken at random from the box. Find the probability that the ball is red. .....

(74) The area of a square is decreased from 676 square inches to 529 square inches. Find the corresponding descrease in the perimeter.
..... in.

(75) The perimeter of a square is increased from 37 inches to 45 inches. Find the corresponding increase in the area.
..... sq. in.

(76) Find the smallest number greater than 3 that 833 is divisible by.
.....

(77) The lengths of the sides of a triangle are 5 inches, 12 inches, and 13 inches. Find the area. ..... sq. in.

(78) $15^3 - 14^3 =$ .....

(79) $2^{10} =$ .....

*(80) Estimate the area of an equilateral triangle of perimeter 24 inches.
..... sq. in.

The University of Texas Interscholastic League
Number Sense Test, Series U-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

(1) 76¢+88¢+38¢= $.....

(2) 38¢+76¢—88¢= .....¢.

(3) 503—268= .....

(4) 804—235—269= .....

(5) 18×13= .....

(6) 18×13⅝= .....

(7) 42÷1½= .....

(8) $31.41—$18.58= $.....

(9) 18½×13½= .....

*(10) Estimate the value of 779 acres of land at $79 an acre. $.....

(11) 234÷36= .....

(12) Find the altitude of a triangle of area 725 square inches and base 16⅔ inches. .....in.

(13) ⅜ is what per cent of 1⅞? .....%.

(14) ⅜ is what per cent less than 1⅞? .....%.

(15) 1⅞ is what per cent greater than 1⅜? .....%.

(16) Find the area of a trapezoid of altitude 27 inches and bases 8⅝ inches and 9⅝ inches. .....sq. in.

(17) Find the area of a rhombus of diagonals 13 inches and 36 inches. ..... sq. in.

(18) Find the altitude of a trapezoid of area 186 square inches and bases 14 inches and 17 inches. .....in.

(19) (52×51) ÷ (13×12) = ...

*(20) Estimate the tax on one gallon of gasoline if the tax on 47 million gallons is $6,345,000. .....¢.

(21) If two cards are taken at random from an ordinary deck of 52 playing cards, find the probability that both are spades. .....

(22) Subtract the sum of $17.44 and $17.87 from the sum of $15.54 and $26.78. $.....

(23) 23½% of $2500 = $.....

(24) Find the cost of 15 gallons of gas at 26.6¢ a gallon. $.....

(25) Find the cost of 15 gallons of gas at 27.8¢ a gallon. $.....

(26) Find the cost of 17 gallons of gas at 26¢ a gallon. $.....

(27) Find the cost of 45 gallons of gas at 26.4¢ a gallon. $.....

(28) If 500 Indonesian rupiahs equal 43 dollars, how many dollars equal 1625 rupiahs? $.....

29) How many rupiahs equal 258 dollars? .....

(30) How many rupiahs equal 1161 dollars? .....

(31) Write in figures: eleven and five-sixteenths million. .....

(32) 258 billion divided by 43 million = ...

(33) (8¾×8¾) — (6¼×6¼) = ...

(34) 91÷3½= .....

(35) 81÷1½= .....

(36) 81¾÷1½= .....

(37) 16÷10⅔= .....

(38) Find the sixth term of the sequence 81, 54, 36, 24, 16 . . . .

(39) 1½×54½= .....

*(40) A rocket moves 13,440 feet a second. Find its speed in miles per hour. ..... m.p.h.

(41) (18×32) + (36×14) = ...

(42) Trunk A holds 15% less than trunk B, and trunk B holds 10% less than trunk C. What per cent less does A hold than C? .....%.

(43) What per cent more does C hold than B? .....%.

(44) What per cent more does B hold than A? .....%.

(45) $202.33—$166.75= $.....

(46) $37^2—35^2$= .....

(47) $10^3—8^3$= .....

(48) If 100 Italian lire are equivalent to 16¢, how many lire are equivalent to $13.60? .....

(49) Find the value in dollars of 4500 lire. $.....

*(50) Estimate the volume of a sphere of radius 8 inches.
..... cu. in.

(51) 110÷3 1/7 = ...

(52 Find the smallest number greater than 7 that 833 is divisible by.
.....

(53) If the tax on 56,000,000 gallons of gasoline is seven million dollars, find the tax on one gallon. .....¢.

(54) How fast should you drive in order to cover 42 miles in 35 minutes?
..... m.p.h.

(55) Find the length of a side of a square of area 20¼ square inches.
..... in.

(56) If a stick of sausage weighing ⅝ oz. sells for 10¢, find the equivalent selling price per pound. $.....

(57) If 12 steaks weighing 14 oz. each sell for $30.24, find the price per pound. $.....

(58) If 10,500 bricks cost $3024, find the cost per thousand.
$.....

(59) Find the tax on 4½ million gallons of gasoline at 4½¢ a gallon.
$.....

*(60) The circumference of a circle is decreased from 132 inches to 107 inches. Estimate the corresponding decrease in the radius.
..... in.

(61) ½ of 67½ = ...

(62) ¼ of 67½ = ...

(63) ¾ of 67½ = ...

(64) ⅜ of 67½ = ...

(65) 2½ of 67½ = ...

(66) 1¼ of 67½ = ...

(67) 1⅜ of 67½ = ...

(68) 67½÷16⅞ = ...

(69) 135÷16⅞ = ...

*(70) Estimate the square root of 462¼. .....

(71) Four dimes are tossed. Find the probability that exactly two heads will show. .....

(72) A box contains 4 red balls and 4 green balls. Two balls are taken at random from the box. Find the probability that one is red and one is green. .....

(73) The perimeter of a square is increased from 37 inches to 45 inches. Find the corresponding increase in the area.
..... sq. in.

(74) The area of a square decreases from 1024 square inches to 676 square inches. Find the corresponding decrease in perimeter.
..... in.

(75) Find the area of a square whose diagonal is 14 inches in length.
..... sq. in.

(76) The edge of a cube is increased from 7 inches to 8 inches. Find the corresponding increase in the volume. .....cu. in.

(77) 87^2 = ...

(78) $11^3 - 9^3$ = ...

(79) $8^4 - 6^4$ = ...

*(80) Estimate the area of an equilateral triangle of perimeter 27 inches. ..... sq. in.

The University of Texas Interscholastic League
Number Sense Test, Series U-7

Contestant's Number..... Contestant's Score.....

Read Directions Carefully Before Begining 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

(1) 233—86+29= .....

(2) 1221—888= .....

(3) 15×28= .....

(4) 28×7½= .....

(5) 361÷19= .....

(6) 9¾×84= .....

(7) (23×61) + (69×13) = ...

(8) 18—9⅜+5⅜—7⅝= .....

(9) 105×7 4/5= .....

*(10) Estimate the revenue obtainable by taxing 1,680,000 gallons of wine at 38¢ a gallon. $.....

(11) 12×7½×28= .....

(12) 819÷7 4/5= .....

(13) Find the base of a triangle of area 819 square inches and altitude 15.6 inches. .....in.

(14) 24 boxes of pralines sell for $42.00. If each box weighs 14 oz., find the selling price per pound. $.....

(15) If a box of candy weighing 14 oz. sells for $1.75, find the equivalent selling price per pound. $.....

(16) 1 3/4 × 1 1/7 = ...

(17) Convert 8000 Mexican pesos into dollars at 12½ pesos to the dollar. $.....

(18) How fast should one drive in order to cover 15 miles in 12½ minutes? ..... m.p.h.

(19) If one drives at the rate of 63 miles an hour, how long will it take him to cover 42 miles? .....minutes.

*(20) Estimate the time required for a rocket traveling 3450 miles per hour to cover 95,128 feet. .....seconds.

(21) How far can one travel in 6 hours, 42 minutes, at 50 miles per hour? ..... mi.

(22) A car traveling 60 miles an hour takes 3 minutes to pass a freight train traveling 40 miles an hour. How long is the train? ..... miles.

(23) An employee of an oyster bar has opened 2500 oysters a day, 300 days a year, for the past 52 years. Find the total number opened. .....

(24) Find the cost of 25 gallons of gas at 42¢ a gallon. $.....

(25) Find the cost of 25 gallons of gas at 41.4¢ a gallon. $.....

(26) Find the cost of 28 gallons of gas at 42¢ a gallon. $.....

(27) Find the cost of 15 gallons of gas at 39.6¢ a gallon. $.....

(28) If 25 gallons of gas cost $10.75, find the cost per gallon. .....¢.

(29) How many gallons of gas can be bought for $11.34 at 42¢ a gallon? ..... gal.

*(30) The personal property tax on a car valued at $670 is $18.49. Estimate the tax rate. .....%.

(31) An employee earning $754 a month receives a 5% increase in salary. How much does he now earn? $.....

(32) An employee earning $774 a month receives a 5% decrease in salary. How much does he now earn? $.....

(33) An employee earning $754 a month receives a 15% increase in salary. How much does he now earn? $.....

(34) An employee receives a 5% cut in salary and now earns $855 a month. How much did he earn before the cut? $.....

(35) Write in figures: eight and seven-sixteenths million. .....

(36) Find the tax on 1 5/7 million gallons of gasoline at 10½¢ a gallon. $.....

(37) If 7500 pegs cost $30.00, find the cost per thousand. $.....

(38) Find the number halfway between 77 and 213. .....

(39) Find the fifth term of the sequence 64, 48, 36, 27, ...

.....

*(40) Estimate the interest on $100 for 10 years at 4% compounded annually. $.....

(41) If pegs cost $4.56 a thousand, find the cost of 5500 pegs.
$.....

(42) 21 is what per cent more than 17½? .....%.

(43) 14⅔ is what per cent less than 18⅓? .....%.

(44) If 100 Italian lire are equivalent to 16¢, find the value of 6500 lire.
$.....

(45) Convert $12.00 into lire. .....lire.

(46) 10 1/2×1 5/7= .....

(47) 1 5/7×3 2/3×10 1/2= .....

(48) 7 1/7+1/2+5/14= .....

(49) 72½ is what per cent of 290? .....%.

*(50) The circumference of a circle is increased by 110 inches. Find the corresponding increase in the radius. .....in.

(51) 28×18= .....

(52) 28⅝×18= .....

(53) 18 3/7×28 7/9= .....

(54) (15 3/7×18) + (25 1/7×9) = ...

(55) (25 1/7×18) — (9×15 2/7) = ...

(56) Subtract $28.86 from $51.12. $.....

(57) Subtract the sum of $15.49 and $13.38 from $51.11.
$.....

(58) Subtract $28.84 from the sum of $27.66 and $23.47.
$.....

(59) Subtract the sum of $17.37 and $11.51 from the sum of $34.57 and $16.59. $.....

*(60) Estimate the area of a triangle each of whose sides is 12 inches in length. .....sq. in.

(61) A speed of 3300 feet a second is equivalent to a speed of
..... m.p.h.

(62) Nine-elevenths of a mile = ...ft.

(63) 15,840 feet = ...mi.

(64) If one mile is equal to 1.61 kilometers, convert a speed of 50 miles an hour to its equivalent in kilometers per hour.

.....

(65) A ranch contains 100 square miles. Find its area in square kilometers. .....

(66) Four coins are tossed. Find the probability that exactly two heads will show. .....

(67) Find the area of a rhombus whose diagonals are 19 inches and 28 inches. ..... sq. in.

(68) Find the area of a trapezoid of altitude 19 inches and bases 29 inches and 27 inches. ..... sq. in.

(69) Find the altitude of a trapezoid of area 396 square inches and bases 23 inches and 21 inches. ..... in.

*(70) If a trip which is usually made in 15 hours is made at a speed 25% slower than usual, how long will the trip take?
..... hrs.

(71) The base of a rectangle is 9 inches, and a diagonal is 9¾ inches. Find the perimeter. ..... in.

(72) $7^3—6^3$= .....

(73) Find the smallest integer greater than 3 that 621 is divisible by.

.....

(74) A box contains 7 white balls and 8 green balls. Two balls are taken at random from the box. Find the probability that one is white and one is green. .....

(75) The perimeter of a square is increased from 33 inches to 41 inches. Find the corresponding increase in the area. .....sq. in.

(76) A card is taken at random from an ordinary deck of 52 playing cards. Find the probability that the card is either a club or a face card. .....

(77) The area of a circle is equal to the circumference. Find the radius. .....

(78) $36^2—33^2$= .....

(79) The square root of 5 19/25 is .....

*(80) The circumference of a circle decreases from 37 inches to 29 inches. Estimate the corresponding decrease in the area.
..... sq. in.

The University of Texas Interscholastic League
Number Sense Test, Series U-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

(1) 428+868—979= .....

(2) 1711—853—367= .....

(3) 51×63= .....

(4) 1024÷128= .....

(5) 11½×36= .....

(6) 11¾×36= .....

(7) 255÷7½= .....

(8) 414÷11½= .....

(9) 828÷5¾= .....

*(10) Estimate the value of 8458 barrels of oil at $3.39 a barrel.
$.....

(11) Find the base of a triangle of area 184 square inches and altitude 23 inches. ..... in.

(12) 26×16= .....

(13) 26⅞×16= .....

(14) 26×16½= .....

(15) 26×16×1⅜= .....

(16) 9⅓×7½= .....

(17) 1/8 is what per cent more than 1/10? .....%.

(18) Find the altitude of a triangle of area 429 square inches and base 33 inches. ..... in.

(19) Find the area of a rhombus of diagonals 53¾ inches and 16 inches. ..... sq. in.

*(20) Estimate the number of revolutions of a wheel of diameter 18 inches in rolling 8 miles. .....

(21) 1/10 is what per cent less than 1/8? .....

(22) Find the cost of 15 gallons of gas at 46¢ a gallon.
$.....

(23) Find the cost of 15½ gallons of gas at 46¢ a gallon.
$.....

(24) Find the cost of 15.8 gallons of gas at 45¢ a gallon.
$.....

(25) Find the cost of 15 gallons of gas at 46.6¢ a gallon.
$.....

(26) Subtract $78.87 from $211.22. $.....

(27) Subtract $78.89 from the sum of $118.86 and $92.36.
$.....

(28) Subtract the sum of $29.48 and $49.39 from $211.26.
$.....

(29) Subtract the sum of $39.86 and $38.97 from the sum of $127.78 and $83.41. $.....

*(30) Estimate the area of an equilateral triangle of perimeter 33 inches.
..... sq. in.

(31) How much should be invested at 4½% in order to earn $378 in interest annually? $.....

(32) If a stick of sausage weighing ¾ oz. sells for 12¢, find the equivalent selling price per pound. $.....

(33) How fast should you drive in order to cover 55 miles in 45 minutes, 50 seconds? ..... m.p.h.

(34) Write in figures: Twenty and thirteen-sixteenths billion.
.....

(35) An employee earning $636 a month receives a 5% increase in salary. How much does he now earn? $.....

(36) An employee earning $638 a month receives a 5% decrease in salary How much does he now earn? $.....

(37) Divide 43¾ billion by 62½ million. .....

(38) Find the number halfway between 117⅞ and 229¾.
.....

(39) Find the seventh term of the sequence 4½, 5¾, 7, 8¼, . . .
.....

*(40) 345.8 is what per cent more than 266? .....%.

(41) ½ of 77½ = ...

(42) ¼ of 77½ = ...

(43) ¾ of 77½ = ...

(44) ⅝ of 77½ = ...

(45) 2½×77½= .....

(46) 1¼×77½= .....

(47) 3¾×77½= .....

(48) $77\frac{1}{2} \div 19\frac{3}{8} =$ .....

(49) $387\frac{1}{2} \div 77\frac{1}{2} =$ .....

*(50) A rocket travels 27,874 feet per second. How many miles does it travel per hour? ..... m.p.h.

(51) 34 is what per cent of 85? .....%.

(52) 119 is what per cent more than 85? .....%.

(53) 34 is what per cent less than 85? .....%.

(54) The hypotenuse of a right triangle is $7\frac{1}{2}$ inches; the base is $4\frac{1}{2}$ inches. Find the altitude. .....in.

(55) If 500 Indonesian rupiahs equal 43 dollars, how many dollars equal 33,500 rupiahs? $.....

(56) How many dollars equal 28,800 rupiahs? $.....

(57) How many rupiahs equal 946 dollars? .....

(58) At what speed should one drive in order to cover 702 miles in 13 hours? ..... m.p.h.

(59) The sides of a triangle are $4\frac{1}{2}$ inches, 6 inches, and $7\frac{1}{2}$ inches, Find the area. ..... sq. in.

*(60) Estimate the time required for a rocket to travel 192,000 miles at 4693 feet per second. .....hrs.

(61) $57\frac{3}{8} \times 43 =$ .....

(62) The square root of 5 19/25 is .....

(63) $2\frac{1}{8} + 1\frac{1}{2} + \frac{1}{8} =$ .....

(64) $6\frac{3}{8} \times 7\frac{1}{2} =$ .....

(65) $7\frac{1}{2} \times 13\frac{1}{8} =$ .....

(66) Find the area of a triangle of sides 13 inches, 13 inches, and 10 inches. .....sq. in.

(67) Two and four-elevenths miles = ...yds.

(68) 1245 miles an hour = ...feet per second.

(69) $91 + 2\frac{1}{8} + 6\frac{1}{2} + \frac{1}{8} =$ .....

*(70) Estimate the speed required for a rocket to travel 46,065 miles in 37 hours. .....feet per second.

(71) A card is taken at random from a deck of 52 playing cards. Find the probability that the card is an ace or a diamond.

.....

(72) The side of a square is increased from 78 inches to 92 inches. Find the corresponding increase in the area.

..... sq. in.

(73) Find the smallest number greater than 11 that 2310 is divisible by.

.....

(74) A box contains 6 white balls, 6 red balls, and 4 green balls. Two balls are taken at random from the box. Find the probability that one is red and one is green. .....

(75) Five coins are tossed. Find the probability that one head and four tails show. .....

(76) The legs of a right triangle are 24 inches and 32 inches. Find the hypotenuse. ..... in.

(77) $57^2 - 56^2 =$ .....

(78) $57^2 + 55^2 - 56^2 - 54^2 =$ .....

(79) $57^3 - 56^3 =$ .....

*(80) The perimeter of a square is decreased from 368 inches to 312 inches. Estimate the corresponding decrease in the diagonal.

..... in.

The University of Texas Interscholastic League

NOTE: If error is found in this Key, grade by the correct answer. Also, please report any error to the State Office, Box 8028, University Station.

Key to Number Sense TEST SERIES U-1

1. 116
2. 46
3. 1 3/8
4. 198
5. 4
6. 139
7. 200
8. 14
9. 3/4
*10. 557–617
11. 216
12. 19
13. 14.65
14. 4.18
15. 69
16. 12.48
17. 17 2/3
18. 204
19. 102
*20. 70–78
21. 400
22. 48
23. 78,625,000
24. 9 3/4
25. 4 7/8
26. 14 5/8
27. 7 5/16
28. 25
29. 1/2
*30. 590–652
31. 1900
32. 5700
33. 3800
34. 950
35. 950
36. 50
37. 68
38. 48
39. 26
*40. 366–405
41. 4.34
42. 4.96
43. 4.69
44. 4.88
45. 12 3/4
46. 27 1/2
47. 8 7/8
48. 55.79
49. 11.37
*50. 7489–8279
51. 33 1/3
52. 50
53. 66 2/3
54. 1/2
55. 81
56. 300
57. 108.16
58. 43.05
59. 4
*60. 43.7–48.3
61. 145
62. 203
63. 348
64. 116
65. 58
66. 87
67. 87
68. 87
69. 87
*70. 3197–3535
71. 22
72. 11
73. 120
74. 120
75. 3/8
76. 5 1/2
77. 56
78. 12
79. 2 1/2
*80. 4.6–5.2

Key to Number Sense TEST SERIES U-2

1. 127
2. 47
3. 134
4. 162
5. 171
6. 166 1/2
7. 16
8. 18
9. 166 1/2
*10. 403.77–446.27
11. 243
12. 21.50
13. 129.50
14. 18
15. 18
16. 5.40
17. 5.70
18. 6.12
19. 5.79
*20. 57,515–63,571
21. 675
22. 687 1/2
23. 688 1/2
24. 701 1/4
25. 70,125
26. 1362 1/2
27. 1362 1/2
28. 12 3/4
29. 325
*30. 78.30–86.56
31. 16 3/4
32. 6 7/8
33. 26 5/8
34. 2015
35. 20,625,000,000
36. 30
37. 38
38. 500
39. 10,000
*40. 172,039–190,149
41. 227.25
42. 227.23
43. 313.10
44. 1320
45. 13,200
46. 441
47. 399
48. 420
49. 420
*50. 836–924
51. 420
52. 406
53. 434
54. 423 3/4
55. 421 7/8
56. 60
57. 48
58. 434
59. 7 1/2
*60. 9–10
61. 104
62. 10.4
63. 16 7/8
64. 8,250,000
65. 4 1/2
66. 2086
67. 3129
68. 5215
69. 15,645
*70. 4472–4944
71. 27
72. 1/3
73. 9 3/4
74. 2/13
75. 4
76. 387
77. 14,402
78. 628
79. 30,636
*80. 52.6–58.3

Key to Number Sense TEST SERIES U-3

1. 187
2. 134
3. 155
4. 3.68
5. 31 3/4
6. 56
7. 8
8. 27 1/8
9. 5 3/4
*10. 26,358–29,133
11. 36
12. 22 1/2
13. 29 1/4
14. 26.06
15. 16.37
16. 7.47
17. 273
18. 221
19. 52
*20. 40.8–45.2
21. 52
22. 5 1/4
23. 299
24. 279 1/2
25. 305 1/2
26. 288 3/4
27. 585
28. 19 1/2
29. 144 3/8
*30. 1.73–1.91
31. 2.1
32. 3.5
33. 5.04
34. 1.54
35. 3.22
36. 28
37. 25
38. 24
39. 21
*40. 12,540–13,860
41. 20
42. 2.60
43. 5.04
44. 5.25
45. 5.32
46. 4.86
47. 5.07
48. 20
49. 20
*50. 38–42
51. 72
52. 525
53. 18
54. 484
55. 495
56. 506 1/4
57. 489 1/2
58. 22
59. 88
*60. 229–254
61. 12,100,000
62. 6
63. 500
64. 300
65. 6
66. 308.50
67. 2.24
68. 10
69. 84,000
*70. 3.8–4.2
71. 132
72. 6
73. 4/13
74. 2 2/3
75. 2/7
76. 7 1/8
77. 220
78. 18
79. 23 1/16
*80. 21.5–23.8

Key to Number Sense TEST SERIES U-4

1. 123
2. 47
3. 130
4. 270
5. 450
6. 15
7. 279
8. 18
9. 8 7/8
*10. 14.8–16.4
11. 72
12. 4.46
13. 8
14. 279
15. 36
16. 37
17. 18
18. 9
19. 36
*20. 1878–2076
21. 297
22. 41
23. 41
24. 8.10
25. 8.40
26. 9.18
27. 8.22
28. 9.81
29. 18
*30. 843–933
31. 152
32. 20
33. 50
34. 75
35. 25
36. 24.05
37. 16 4/5
38. 18 1/5
39. 18,200
*40. 3990–4410
41. 11,875,000
42. 50
43. 11,875
44. 60
45. 182
46. 1207
47. 2.84
48. 2 1/4
49. 65
*50. 6270–6930
51. 2704
52. 2652
53. 1352
54. 442
55. 104
56. 156
57. 5356
58. 26
59. 884
*60. 55–61
61. 700
62. 672
63. 640
64. 30,000
65. 12
66. 32
67. 640
68. 640
69. 700
*70. 2409–2663
71. 17
72. 25
73. 374
74. 52
75. 9
76. 4/13
77. 1/36
78. 219
79. 397
*80. 77.4–85.6

Key to Number Sense TEST SERIES U-5

1. 1.82
2. 66
3. 270
4. 282
5. 26.40
6. 7.55
7. 15
8. 2
9. 138
*10. 197–218
11. 18
12. 32
13. 8
14. 8 1/2
15. 67.2
16. 134.4
17. 33.6
18. 280
19. 18
*20. 2.61–2.89
21. 36
22. 9
23. 144
24. 2.85
25. 2.55
26. 3.23
27. 2.94
28. 14
29. 12,500
*30. 42.75–47.25
31. 1
32. 3,187,500
33. 1 2/5
34. 200
35. 1400
36. 2400
37. 6900
38. 2 4/5
39. 25
*40. 20,143–22,264
41. 24.66
42. 24.66
43. 24.63
44. 24.72
45. 485
46. 38
47. 20
48. 25
49. 12 1/2
*50. 5–5 1/2
51. 361
52. 370 1/2
53. 380 1/4
54. 56 1/4
55. 56 1/4
56. 51
57. 30
58. 31
59. 135
*60. 3992–4412
61. 4
62. 880
63. 440
64. 1100
65. 1584
66. 3,705,000
67. 7 1/2
68. 562.50
69. 1/9
*70. 183,920–203,280
71. 61
72. 0
73. 1/3
74. 12
75. 41
76. 7
77. 30
78. 631
79. 1024
*80. 26.3–29.1

Key to Number Sense TEST SERIES U-6

1. 2.02
2. 26
3. 235
4. 300
5. 234
6. 249
7. 28
8. 12.83
9. 249 3/4
*10. 58,463–64,619
11. 6 1/2
12. 87
13. 20
14. 80
15. 66 2/3
16. 243
17. 234
18. 12
19. 17
*20. 12.8–14.2
21. 1/17
22. 7.01
23. 587.50
24. 3.99
25. 4.17
26. 4.42
27. 11.88
28. 139 3/4
29. 3000
*30. 12,825–14,175
31. 11,312,500
32. 6000
33. 37 1/2
34. 26
35. 54
36. 54 1/2
37. 1 1/2
38. 10 2/3
39. 81 3/4
*40. 8704–9623
41. 1080
42. 23 1/2
43. 11 1/9
44. 17 11/17
45. 35.58
46. 144
47. 488
48. 8500
49. 7.20
*50. 2037–2252
51. 35
52. 17
53. 12 1/2
54. 72
55. 4 1/2
56. 2.56
57. 2.88
58. 288
59. 202,500
*60. 3.7–4.2
61. 33 3/4
62. 16 7/8
63. 50 5/8
64. 25 5/16
65. 168 3/4
66. 84 3/8
67. 92 13/16
68. +
69. 8
*70. 20.4–22.6
71. 3/8
72. 4/7
73. 41
74. 24
75. 98
76. 169
77. 7569
78. 602
79. 2800
*80. 33.3–36.8

Key to Number Sense TEST SERIES U-7

1. 176
2. 333
3. 420
4. 210
5. 19
6. 819
7. 2300
8. 6
9. 819
*10. 606,480–670,320
11. 2520
12. 105
13. 105
14. 2
15. 2
16. 2
17. 640
18. 72
19. 40
*20. 17.8–19.8
21. 335
22. 1
23. 39,000,000
24. 10.50
25. 10.35
26. 11.76
27. 5.94
28. 43
29. 27
*30. 2.6–2.9
31. 791.70
32. 735.30
33. 867.10
34. 900
35. 8,437,500
36. 180,000
37. 4.00
38. 145
39. 20 1/4
*40. 45.62–50.42
41. 25.08
42. 20
43. 20
44. 10.40
45. 7500
46. 18
47. 66
48. 8
49. 25
*50. 16.6–18.4
51. 504
52. 519
53. 530 1/3
54. 504
55. 315
56. 22.26
57. 22.24
58. 22.29
59. 22.28
*60. 59.2–65.5
61. 2250
62. 4320
63. 3
64. 80.5
65. 239.21
66. 3/8
67. 266
68. 532
69. 18
*70. 19–21
71. 25 1/2
72. 127
73. 9
74. 8/15
75. 37
76. 11/26
77. 2
78. 207
79. 2 2/5
*80. 40–44

Key to Number Sense TEST SERIES U-8

1. 317
2. 491
3. 3213
4. 8
5. 414
6. 423
7. 34
8. 36
9. 144
*10. 27,238–30,107
11. 16
12. 416
13. 430
14. 429
15. 572
16. 70
17. 25
18. 26
19. 430
*20. 8515–9412
21. 20
22. 6.90
23. 7.13
24. 7.11
25. 6.99
26. 132.35
27. 132.33
28. 132.39
29. 132.36
*30. 49.7–55.1
31. 8400
32. 2.56
33. 72
34. 20,812,500,000
35. 667.80
36. 606.10
37. 700
38. 173 13/16
39. 12
*40. 28 1/2–31 1/2
41. 38 3/4
42. 19 3/8
43. 58 1/3
44. 48 7/16
45. 193 3/4
46. 96 7/8
47. 290 5/8
48. 4
49. 5
*50. 18,054–19,956
51. 40
52. 40
53. 60
54. 6
55. 2881
56. 2476.8
57. 11,000
58. 54
59. 27
*60. 57–63
61. 2476 4/5
62. 2 2/5
63. 4
64. 50
65. 100
66. 60
67. 4160
68. 1826
69. 100
*70. 1734–1918
71. 4/13
72. 2380
73. 14
74. 1/5
75. 5/32
76. 40
77. 113
78. 222
79. 9577
*80. 18.8–20.8