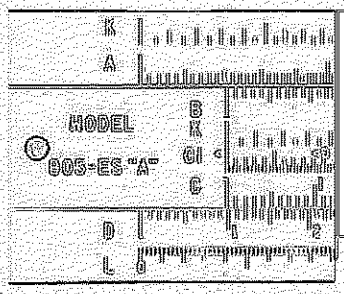
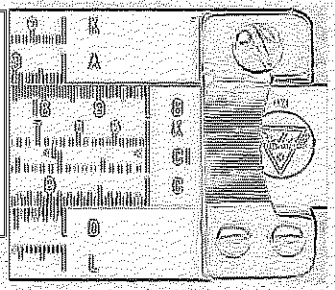
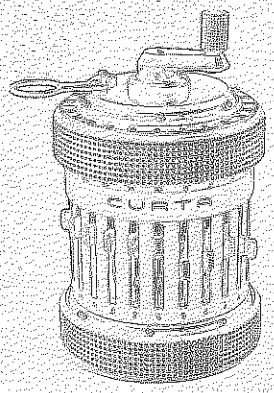
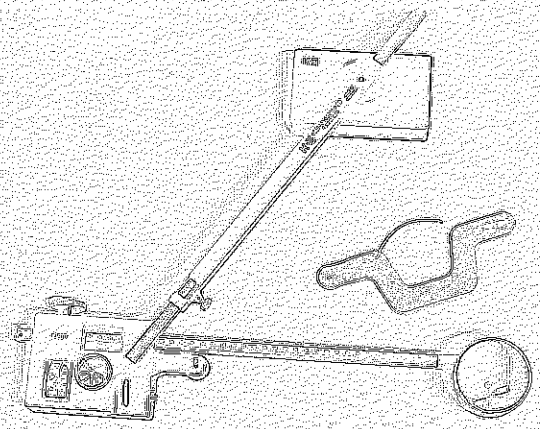


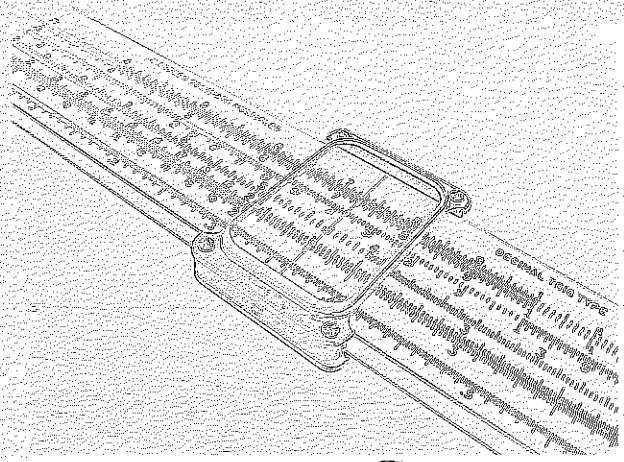
Texas Competitive Mathematics
Web - http://www.texasmath.org
Fax - (206) 666-MATH/(206) 666-6284
E-Mail - webmaster@texasmath.org

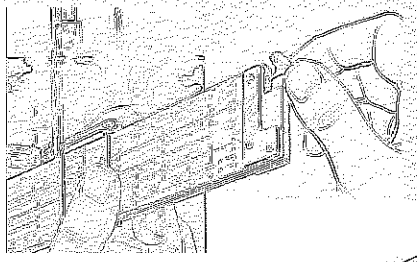


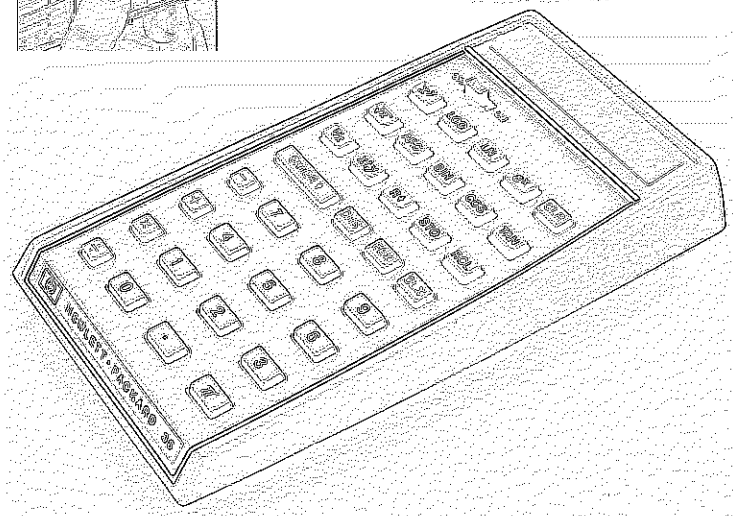
1964-65 UIL Number Sense
(18 pages)

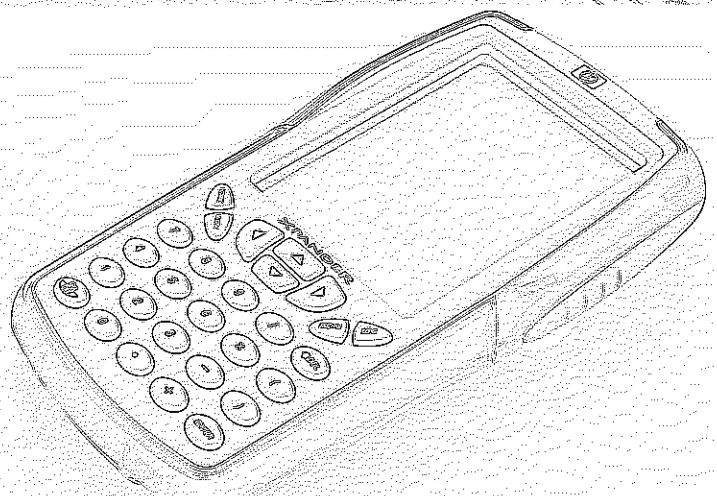


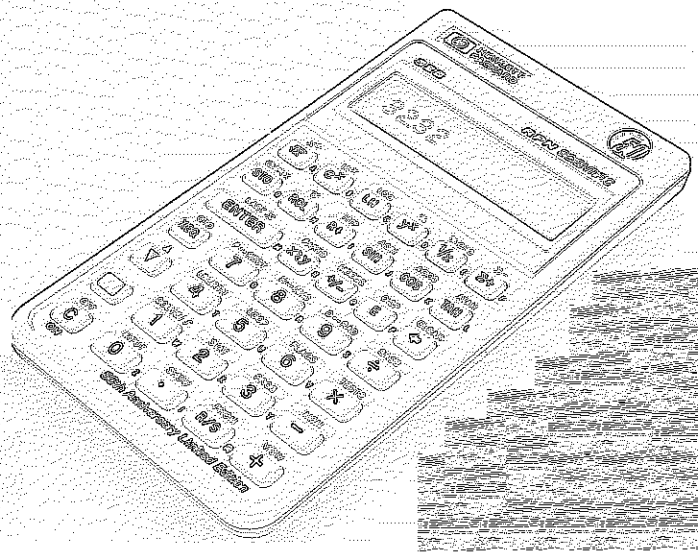


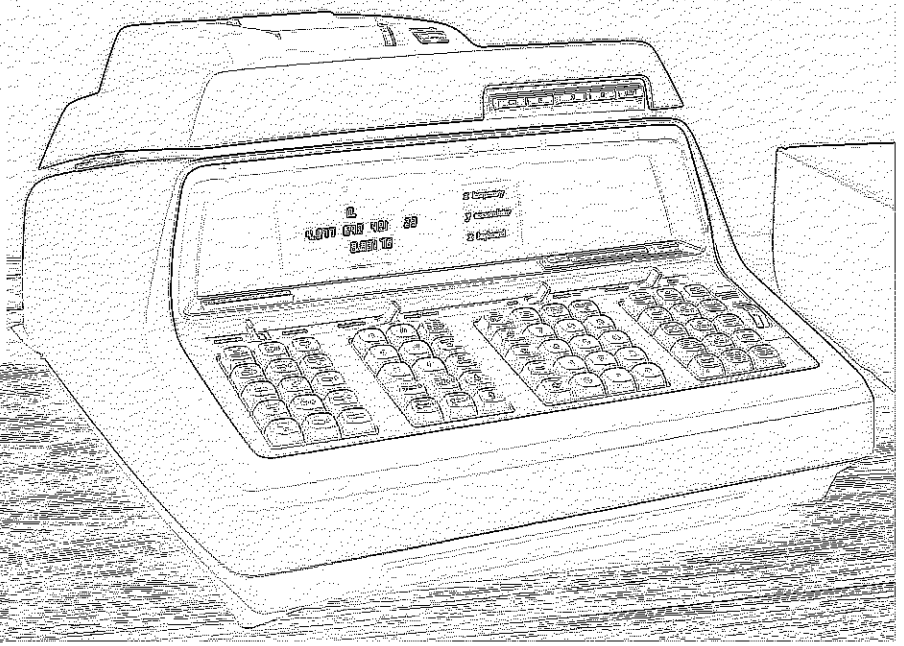












The University of Texas Interscholastic League
Number Sense Test, Series X-1

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.

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Stop—Wait for Signal

(1) 83—28= .....

(2) 192÷24= .....

(3) 277+146= .....

(4) 16×6¼= .....

(5) 273—146+82= .....

(6) The interest on $1600 for 6 months at 6¼% a year is $.....

(7) The area of a triangle of base 12½ in. and altitude 8 in. is ..... sq. in.

(8) How far can you drive in 7 hours 12 minutes at 70 miles an hour? ..... miles.

(9) 8⅛—5⅝—1¼= .....

*(10) An owner's cost of operating his car for 4½ years was $3510. Estimate the average cost per month. $.....

(11) 12½ feet= ..... inches.

(12) 162 inches= ..... feet.

(13) Find the base of a triangle of area 171 sq. in. and altitude 19 in. ..... in.

(14) Subtract $5.55 from $32.22. $.....

(15) Find the sum of $26.67, $17.78, and $5.55. $.....

(16) Write in figures: sixteen and one-eighth million. .....

(17) Find the cost of driving a car 442 miles at 9¢ a mile. $.....

(18) Find the cost of driving a car 432 miles at 9¢ a mile. $.....

(19) Find the cost of driving a car 442 miles at 9½¢ a mile. $.....

*(20) Estimate the cost of food for one year (365 days) for four people at an average cost of $1.22 per person per day. $.....

(21) Two dice are rolled. Find the probability that either a two or a three will show. .....

(22) 66÷14⅔= .....

(23) 132÷14⅔= .....

(24) 88÷7⅓= .....

(25) If 3⅛ ounces are equivalent to 89 grams, then 267 grams are equivalent to ..... ounces.

(26) 8⅓ is to 33⅓ as 7¼ is to .....

(27) 5½ is to ..... as 6¾ is to 27.

(28) 6½ is to 32½ as ..... is to 27½.

(29) The average of 59, 88, 75, 82 is .....

*(30) If 2.64 gallons are equivalent to 10 liters, estimate the cost of 25 liters of gasoline at 34¢ a gallon. $.....

(31) 15×18= .....

(32) 15×18⅝= .....

(33) 15 5/9×18= .....

(34) 15 5/9×18⅝= .....

(35) 18×1 1/7×15 5/9= .....

(36) (45×18)+(7×270)= .....

(37) 280÷15 5/9= .....

(38) Find the sixth term of the sequence 5¾, 5⅝, 5, 4⅝ .....

(39) 5¾+5⅝+5+4⅝+4¼+3⅞= .....

*(40) Convert 7936 pesos into dollars at 12.4 pesos to the dollar. ..... dollars.

(41) Convert 480 dollars into pesos at 12½ pesos to the dollar. ..... pesos.

(42) Convert 520 dollars into pesos at 12½ pesos to the dollar. ..... pesos.

(43) If 21 miles an hour is equivalent to 35 kilometers an hour, then 33 miles an hour is equivalent to ..... kilometers an hour.

(44) Convert 480 dollars into pesos at 12¼ pesos to the dollar. ..... pesos.

(45) 4⅜—1⅞+2⅜= .....

(46) 21 1/6—7⅔—7 5/6= .....

(47) 4⅛—1⅞+2¼= .....

(48) 1 7/9×4½= .....

(49) 4½×4¼×1 7/9= .....

*(50) Estimate the cost of driving 846 kilometers at 8½¢ a mile, assuming that 100 kilometers are equivalent to 62 miles. $.....

(51) $4\frac{1}{6} \times 1\frac{1}{3} =$ .....

(52) $4\frac{1}{6}$ is three-fourths of what number? .....

(53) $4\frac{1}{6}$ is three-eighths of what number? .....

(54) $3\frac{1}{3}$ is what per cent more than $2\frac{2}{3}$? .....%.

(55) $2\frac{2}{3}$ is what per cent less than $3\frac{1}{3}$? .....%.

(56) $2\frac{2}{3}$ is what per cent of $3\frac{1}{3}$? .....%.

(57) $10\frac{2}{3}$ is what per cent less than $13\frac{1}{3}$? .....%.

(58) If trunk A holds 20% more than trunk B and trunk B holds 30% more than trunk C, what per cent more does A hold than C? ..... %.

(59) If trunk A holds 20% more than trunk B and trunk C holds 10% less than trunk B, what per cent less does C hold than A? ..... %.

*(60) How much interest will an investment of $8000 earn in 5 years at 4% compounded annually? $.....

(61) What sum must be invested at 4.8% in order that the annual interest be $720? $.....

(62) 4.8% of $7500 is $.....

(63) If the annual interest on an investment of $12,000 is $390, what is the interest rate? .....%.

(64) Find the tax on a farm of 700 acres valued at $160 an acre if the tax rate is $2\frac{1}{8}$%. $.....

(65) A speed of 3000 miles an hour is equivalent to a speed of ..... feet a second.

(66) $11\frac{1}{2}$ is the square root of what number? .....

(67) $(17\frac{1}{2} \times 8\frac{1}{2}) + (35 \times 5\frac{3}{4}) =$ .....

(68) Subtract $28.83 from the sum of $18.77 and $44.35. $.....

(69) Subtract the sum of $15.43 and $13.46 from the sum of $18.41 and $44.77. $.....

*(70) Estimate the time required for a rocket to travel 580,500 miles at a speed of 9900 feet a second. ..... hours.

(71) The greatest common divisor of 315 and 168 is .....

(72) The perimeter of a square increases from 55 in. to 67 in. Find the corresponding increase in the area. .....sq. in.

(73) The least common multiple of 44 and 55 is .....

(74) A box contains two red balls and three blue balls. Two balls are taken at random from the box. Find the probability that one is red and one is blue.....

(75) Find the probability that both are red. .....

(76) Find the probability that both are blue. .....

(77) Of 531 boys in a school, 278 play football, 338 play baseball, and 56 play neither. How many play both?.....

(78) An employee receives a twenty per cent cut in wages and now earns $564 a month. How much did he receive each month before the cut? $.....

(79) The square root of $132\frac{1}{4}$ is .....

*(80) Estimate the cost of a circular carpet of diameter 16 feet at $12.15 a square yard. $.....

The University of Texas Interscholastic League
Number Sense Test, Series X-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) 133+888= .....

(2) 833—188= .....

(3) 831—186—256= .....

(4) 18×16= .....

(5) 18⅞×16= .....

(6) 288÷36 = ...

(7) 288÷7⅛= .....

(8) The square root of 5 1/16 is .....

(9) 13⅛—10¾+3⅞= .....

*(10) Estimate the value of 13,350 barrels of oil at $4.22 a barrel. $.....

(11) 22 feet= .....inches.

(12) 252 inches= .....feet.

(13) 198 square feet= .....square yards.

(14) 36×36= .....

(15) 2½ square yards= .....square feet.

(16) 2½ square yards= .....square inches.

(17) Find the interest on $9600 for one year at 3¾% a year. $.....

(18) If the interest on $7200 for one year is $270, what is the rate of interest? ..... %.

(19) How much should be invested for one year at 3¾% a year if $180 in interest is to be earned? $.....

*(20) Estimate the tax on 13,350,000 gallons of gasoline at 4.22¢ a gallon. $.....

(21) Write in figures: nine and five-eighths billion. .....

(22) Two dice are rolled. Find the probability that either a two or a four will show. .....

(23) Find the cost of ten gallons of gas at 32.9¢ a gallon. $.....

(24) Find the cost of twenty gallons of gas at 33.9¢ a gallon. $.....

(25) Find the cost of fifteen gallons of gas at 33.8¢ a gallon. $.....

(26) 76×25= .....

(27) 76×75= .....

(28) 76×6¼= .....

(29) 7⅜×6¼= .....

*(30) If one mile is equivalent to 1.61 kilometers, convert 2411.75 kilometers into miles. .....miles.

(31) If a furlong is one-eighth of a mile, then 880 yards are equivalent to ..... furlongs.

(32) 1980 feet are equivalent to ..... furlongs.

(33) 3¼ furlongs are equivalent to ..... yards.

(34) 28 miles are equivalent to ..... furlongs.

(35) 3¾ is what per cent more than 3? ..... %.

(36) 6 is what per cent less than 7½? ..... %.

(37) 68 is what per cent less than 80? ..... %.

(38) 13⅜ is what per cent less than 16? ..... %.

(39) 13⅜ is what per cent of 16? ..... %.

*(40) If one knot is equivalent to 6080 feet, then a ship that is traveling 33 knots per hour is traveling ..... miles per hour.

(41) 33¾÷13½= .....

(42) If 24 steaks weighing 9 ounces each sell for $33.75, what is the equivalent price per pound? $.....

(43) If one English pound is equivalent to 2⅘ dollars and 12½ Mexican pesos are equivalent to one dollar, convert 7.6 pounds into pesos. ..... pesos.

(44) Convert 490 pesos into pounds. ..... pounds.

(45) Convert 126 dollars into pounds. ..... pounds.

(46) Convert 55 pounds into dollars. ..... dollars.

(47) 62½% of $2016= $.....

(48) 62¾% of $2016= $.....

(49) 72½% of $2016= $.....

*(50) If wages went up 18%, a worker who now earns $477.90 a month previously earned $..... a month.

(51) $2\frac{7}{8} \times 17\frac{1}{2} =$ .....

(52) How far can you travel in 50 minutes at 54 miles an hour? ..... miles.

(53) How fast should you drive in order to cover 44 miles in 48 minutes? ..... miles an hour.

(54) How long does it take to cover 14 miles at 56 miles an hour? ..... minutes.

(55) If a car gets 18 miles to the gallon of fuel, how many gallons are required to operate it for 11 hours at 63 miles an hour? ..... gallons.

(56) If a car gets 16 miles to the gallon of fuel and fuel costs 30¢ a gallon, find the cost of fuel to operate it for $8\frac{1}{2}$ hours at 56 miles an hour. $.....

(57) If a car gets 16 miles to the gallon of fuel and fuel costs 30¢ a gallon, how long can it be operated at 56 miles an hour on an expenditure of $7.35 for fuel? ..... hours.

(58) An employee earns $833.33 a month. He pays $94.46 on his car and $136.66 on his home each month. How much has he left for other expenses? $.....

(59) If the assets of a savings and loan association decrease from $45,000,000 to $42,750,000, by what per cent do the assets decrease? ..... %.

*(60) How long does it take a rocket to cover 22,950 miles at 3960 feet a second? ..... hours.

(61) Subtract $18.85 from the sum of $16.32 and $17.71. $.....

(62) Subtract the sum of $17.32 and $16.71 from $41.01. $.....

(63) Subtract the sum of $16.35 and $17.68 from the sum of $19.34 and $21.67. $.....

(64) The greatest common divisor of 72 and 126 is .....

(65) $12\frac{1}{2}$ is the square root of what number? .....

(66) $3\frac{1}{2}$ is the cube root of what number? .....

(67) The square root of 529 is .....

(68) The cube root of 512 is .....

(69) If rock wool costs 12¢ a cubic foot, find the cost of insulating an attic containing 2000 square feet with rock wool 6 inches deep. $ .....

*(70) Find the number of revolutions made by a wheel of diameter 30 inches in rolling 100 miles. .....

(71) The diagonal of a square is increased from $19\frac{1}{4}$ in. to $27\frac{1}{4}$ in. Find the corresponding increase in the area. ..... sq. in.

(72) Find the area of a rectangle of base 30 in. and diagonal $32\frac{1}{2}$ in. ..... sq. in.

(73) Find the perimeter of a rectangle of diagonal 32.5 in. and base 12.5 in. ..... in.

(74) Of 411 girls in a school, 188 take sewing, 248 take cooking, and 118 take neither. How many take both? .....

(75) How many take one and only one of the two subjects? .....

(76) A box contains 5 red balls and 7 green balls. Two balls are taken at random from the box. Find the probability that one is red and one is green. .....

(77) Find the probability that both are green. .....

(78) Find the probability that both are the same color. .....

(79) A card is taken at random from an ordinary deck of 52 playing cards. What is the probability that it is a diamond or a face card? .....

*(80) If the perimeter of an equilateral triangle increases from 11 in. to 29 in., estimate the corresponding increase in the area. ..... sq. in.

The University of Texas Interscholastic League

Number Sense Test, Series X-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) 66+166= .....

(2) 221—78= .....

(3) 321—86—178= .....

(4) 16×11⅜= .....

(5) 272÷17= .....

(6) 11⅜—7⅞—1⅞= .....

(7) $3\frac{3}{16}+18\frac{5}{8}+18\frac{7}{16}$= .....

(7) 11⅞×16= .....

(9) 182÷11⅜= .....

*(10) Estimate the cost of gasoline at 36.9¢ a gallon on a trip of 3284 miles in a car that gets 18 miles to the gallon. $.....

(11) 5% of $4680= $.....

(12) 2½% of $4640= $.....

(13) 12½% of $4680= $.....

(14) The interest on $4680 for one year at 4% a year is $.....

(15) If the interest on $4680 for one year is $117, the annual rate of interest is ..... %.

(16) If the interest on a sum of money for one year at 2½% a year is $234, then the sum of money is $.....

(17) The area of a triangle of altitude 19½ in. and base 16 in. is ..... sq. in.

(18) The altitude of a triangle of area 312 sq. in. and base 19½ in. is ..... in.

(19) 156÷19½= .....

*(20) If a ranch of 4680 acres is valued at $163,800, estimate the value of 2880 acres of this ranch. $.....

(21) (45×14)—(42×15)= .....

(22) (45×14)—(39×15)= .....

(23) (18×15)+(14×45)= .....

(24) 3¾×1 1/15= .....

(25) 3⅛×3¾= .....

(26) 3⅛×2⅝×3¾= .....

(27) A grocer buys 11½ sides of beef at $84 a side and 16 cases of eggs at $11.50 a case. How much does he spend? $.....

(28) Subtract $185.25 from $310.20. $.....

(29) Subtract the sum of $88.43 and $96.83 from $310.20. $.....

*(30) If a head of 2.31 feet of fresh water creates a hydrostatic pressure of one pound per square inch, estimate the pressure created by a head of 32.8 feet of fresh water. ..... lb. per sq. in.

(31) If 100 lire are equivalent to 16¢, then $88 is equivalent to ..... lire.

(32) 88×6¼= .....

(33) 275÷6¼= .....

(34) 275÷12½= .....

(35) 550÷6¼= .....

(36) If 1250 pegs cost $480, find the cost per thousand. $.....

(37) If 1250 pegs cost $380, find the cost of 750 pegs. $.....

(38) If pegs cost $384 a thousand, find the cost of 550 pegs. $.....

(39) If pegs cost $38.40 a hundred, how many pegs can be bought for $192? .....

*(40) Estimate the altitude of a triangle each side of which is 14 in. long. ..... in.

(41) The circumference of circle A is twice that of circle B. The area of circle A is ..... times that of circle B.

(42) If the area of circle A is nine times that of circle B, then the diameter of circle A is ..... times that of circle B.

(43) If a car gets 18 miles to the gallon, find the cost of gas for a trip of 810 miles at 35¢ a gallon. $.....

(44) Find the cost of 46 gallons of gas at 34¢ a gallon. $.....

(45) 32½ is what per cent more than 26? ..... %.

(46) 13 is what per cent less than 16¼? ..... %.

(47) 13 is what per cent of 16¼? ..... %.

(48) 3¼ is what per cent of 16¼? ..... %.

(49) $1300 is what per cent less than $1625? ..... %.

*(50) If the circumference of a circle increases by 100 feet, by how much does the radius increase? ..... feet.

(51) How far can you drive in 9 hours 40 minutes at 63 miles an hour? ..... miles.

(52) How far can you drive in 8 hours 24 minutes at 55 miles an hour? ..... miles.

(53) How fast must you drive in order to cover 5⅛ miles in 5 minutes? ..... miles an hour.

(54) How long does it take to travel 5⅛ miles at 32 miles an hour? ..... minutes.

(55) How fast must a rocket travel in order to cover 21,600 miles in 8 hours? ..... feet per second.

(56) A speed of 4884 feet a second is equivalent to how many miles an hour? ..... miles an hour.

(57) A speed of 3345 miles an hour is equivalent to how many feet a second? ..... feet a second.

(58) If $324\times44=14{,}256$, then $329\times44=$ .....

(59) If $14{,}256\div162=88$, then $14{,}418\div162=$ .....

*(60) How far can you drive in a car getting 18½ miles per gallon of fuel on an expenditure of $68.62 for fuel at 36½¢ a gallon. ..... miles.

(61) If trunk A holds 20% more than trunk B and 56% more than trunk C, what per cent more does B hold than C? ..... %.

(62) If B holds 39 cubic feet, how much does C hold? ..... cu. ft.

(63) If a worker receives a 4 per cent increase in wages and now earns $130 a week, how much did he earn before the raise? $..... a week.

(64) A student has $3212.32 on deposit in a savings bank. He withdraws $1444.61 and later deposits $867.29. How much does he now have in his account? $.....

(65) 135 is what per cent greater than 125? ..... %.

(66) If 18 steaks, weighing 6 ounces each, sell for $18.63, find the price per pound. $.....

(67) A factory increases its production five per cent and now produces 1932 units a week. How many were produced before the increase? ..... units a week.

(68) A factory decreases its production six per cent and now produces 1739 units a month. How many were produced before the decrease? ..... units a month.

(69) Find the tax on fifty-two million gallons of gasoline at 7¼¢ a gallon. $.....

*(70) A decrease in production from 3388 units a month to 3117 units a month is equivalent to what percent decrease? ..... %

(71) How many gallons of gasoline must be taxed at 6½¢ a gallon in order to yield $322,400 in revenue? ..... gallons.

(72) Two dice are rolled. Find the probability that neither seven, eight, nor twelve will show. .....

(73) Find the greatest common divisor of 1863 and 54. .....

(74) 2½ is the cube root of .....

(75) A box contains 5 white balls and 5 black balls. Two balls are taken at random from the box. Find the probability that at least one of the balls is not black. .....

(76) $3224\div3\frac{1}{4}=$ .....

(77) The cube root of 15,625 is .....

(78) The area of a right triangle is 486 sq. in., and the altitude is 27 in. Find the perimeter. ..... in.

(79) The perimeter of a square is increased from 26.917 in. to 42.917 in. Find the corresponding increase in the area. ..... sq. in.

*(80) The area of an equilateral triangle is 62.3556 sq. in. Estimate the length of a side. ..... in.

The University of Texas Interscholastic League

Number Sense Test, Series X-4

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

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Stop—Wait for Signal

(1) 266+77= .....

(2) 311—188= .....

(3) 13×18= .....

(4) 311—88—189= .....

(5) 252÷14= .....

(6) 17¼—9⅜—5¾= .....

(7) 18×13 5/6 = ...

(8) 119÷1¾= .....

(9) (13×18)+(32×13)= .....

*(10) If 2.64 gallons are equivalent to 10 liters, then 396 gallons are equivalent to ..... liters.

(11) Subtract $27.65 from $41.11. $.....

(12) Find the area of a triangle of altitude 2.8 in. and base 3.6 in. ..... sq. in.

(13) Find the base of a triangle of area 10.08 sq. in. and altitude 3.6 in. ..... in.

(14) How many shirts at $3.75 each can be bought for $60? .....

(15) Find the sum of $26.75, $36.58, and $9.98. $.....

(16) Subtract the sum of $14.92 and $12.73 from $41.10. .....

(17) How many shirts at $3.75 each can be bought for $56.25? .....

(18) Subtract the sum of $14.72 and $12.93 from the sum of $21.52 and $19.59. $.....

(19) Find the shortest side of a triangle two of whose sides are 36 in. and 38 in. and whose perimeter is 111 in. ..... in.

*(20) If one knot is equivalent to 6080 feet, then a ship that has a top speed of 35 knots an hour has a top speed of ..... miles an hour.

(21) Find the area of a right triangle of altitude 7½ in. and hypotenuse 12½ in. ..... sq. in.

(22) Find the cost of 11¼ pounds of rice at 24¢ a pound. $.....

(23) If 2⅔ lb. of tomatoes costs 84c, find the cost of 3⅓ lb. $.....

(24) A grocer buys 1235 lb. of sugar at 38¢ a pound and 4200 lb. of beans at 7.65¢ a pound. How much does he pay? $.....

(25) Two-thirds of 31½ is .....

(26) 53⅜—21⅞—17½= .....

(27) 50⅜—21⅞—14½= .....

(28) 63⅜—17½—31⅞= .....

(29) (8⅓×21⅙)—(13⅜×8⅓)= .....

*(30) Estimate the revenue obtainable by taxing 4,375,000 gallons of gasoline at 8¾¢ a gallon and 16,250 motor vehicles at $8.75 each. $.....

(31) If a Volvo car sells for fifty thousand pesos in Mexico, find the equivalent selling price in dollars at 12.5 pesos to the dollar. ..... dollars.

(32) If A is 60% greater than B, then B is what per cent less than A? ..... %.

(33) 16⅔ is what per cent less than 26⅔? ..... %.

(34) 26⅔ is what per cent more than 16⅔? ..... %.

(35) If C is 30% more than B and B is 30% more than A, then C is ..... % more than A.

(36) If C is 50% more than A and 25% more than B, then B is ..... % more than A.

(37) 8 4/7 is what percent of 11 3/7? ..... %.

(38) 8 4/7 is what per cent less than 11 3/7? ..... %.

(39) 12 4/9 is what per cent more than 11 1/9? ..... %.

*(40) Estimate the cost of gasoline for a trip of 504 miles in a car getting 17½ miles to the gallon at 33.9¢ a gallon. $.....

(41) 11 3/7×1¾= .....

(42) 8 4/7÷¾= .....

(43) Write in figures: eight and one-eighth million. .....

(44) How many shirts can be bought for $48.75 at $3.75 each? .....

(45) If you can drive 90 miles in 1 hour 39 minutes, how long should it take you to drive 150 miles? ..... hours.

(46) Fourteen per cent of $187.50 is $.....

(47) Find the average of 47 ⅞, 48, 68½, and 39⅝. .....

(48) If 425 pegs cost \$85, find the cost per thousand. \$.....

(49) 150 is to 90 as ..... is to 99.

*(50) If one English pound is equivalent to 35 Mexican pesos and 12½ Mexican pesos are equivalent to one U.S. dollar, convert 182 dollars into pounds. ..... pounds.

(51) How far can you drive in 9 hours 7½ minutes at 48 miles an hour? ..... miles.

(52) How long does it take to drive 450 miles at 56¼ miles an hour? ..... hours.

(53) At what speed should you drive in order to cover 3⅜ miles in 5 minutes? ..... miles an hour.

(54) A car that is traveling 75 miles an hour is moving how many feet a second? ..... feet a second.

(55) If a car gets 18 miles to the gallon of fuel and burns \$36 worth of fuel on a trip of 2160 miles, find the cost of fuel per gallon. .....¢

(56) At what speed should you drive in order to cover 473 miles in 8 hours 36 minutes? ..... miles an hour.

(57) An increase in speed of 100% is accompanied by a decrease in time of ..... %

(58) An increase in speed of 60% is accompanied by a decrease in time of ..... %.

(59) How far can you drive on \$56 worth of fuel costing 35¢ a gallon in a car getting 16 miles to the gallon? ..... miles.

*(60) How long does it take for a rocket traveling 17,820 feet a second to cover 16,200 miles? ..... minutes.

(61) $438 \div 9\frac{1}{8} =$ .....

(62) The square root of (75×27) is .....

(63) 7 is the cube root of .....

(64) $81^2 - 71^2 =$ .....

(65) The square root of $(81 + 144)$ is .....

(66) If an automobile agency increases its sales by fifteen per cent and now sells 69 cars a month, how many cars did it sell each month before the increase? .....

(67) Find the tax on 8⅞ million gallons of gasoline at 8.8¢ a gallon. \$ .....

(68) If the tax on 8,875,000 gallons of gasoline is \$710,000, find the tax on one gallon. .....¢.

(69) If the tax on gasoline is 6¼¢ a gallon, how many gallons must be taxed to yield \$12,400 in revenue? ..... gallons.

*(70) Estimate the perimeter of an equilateral triangle of altitude 12 in. ..... in.

(71) A box contains 18 red balls, 27 blue balls, and 45 green balls. A ball is taken at random from the box. Find the probability that the ball is not blue. .....

(72) A pair of dice is rolled. Find the probability that neither 2, 12, 7, nor 5 will show. .....

(73) If the perimeter of a square is increased by 50%, then the area is increased by ..... %.

(74) A box contains 5 white balls and 4 black balls. Two balls are taken at random from the box. Find the probability that one is white and one is black. .....

(75) A box contains 5 green balls and 5 red balls. Two balls are taken at random from the box. Find the probability that one is green and one is red. .....

(76) Find the area of a right triangle of altitude 75 in. and hypotenuse 195 in. ..... sq. in.

(77) The square root of (54×96) is .....

(78) A card is drawn at random from an ordinary deck of 52 playing cards. Find the probability that it is neither a diamond nor a face card. .....

(79) Find the altitude of a triangle of area 6750 sq. in. and base 180 in. ..... in.

*(80) Estimate the difference in cost at \$7.79 a square yard of two circular rugs, the smaller having a diameter of 14¼ feet and the larger diameter of 22¼ feet. \$.....

The University of Texas Interscholastic League

Number Sense Test, Series X-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) The sum of \$88.45 and \$233.49 is \$.....

(2) The difference of \$233.45 and \$88.49 is \$.....

(3) 6¼% of \$272 is \$.....

(4) 877+1355—979= .....

(5) 24×22⅜= .....

(6) 42÷1¾= .....

(7) The square root of (144+256) is .....

(8) The square root of (50×128) is .....

(9) 7½ is the square root of .....

*(10) Estimate the tax on 885 acres of land valued at \$135 an acre if the tax rate is 1⅜%. \$.....

(11) Find the perimeter of a square of area 156¼ sq. in. ..... in.

(12) Find the altitude of a triangle of area 156¼ sq. in and base 25 in. ..... in.

(13) 31⅜—18⅞—9⅞= .....

(14) (27×28)—(24×24)= .....

(15) A farmer bought 32½ acres of land at \$140 an acre and 140 fruit trees at \$17.50 each. How much did he spend? \$.....

(16) Find the interest on \$7700 for one year at 4% a year. \$.....

(17) How much should be invested for one year at 4½% in order to yield \$387 in interest? \$.....

(18) At what annual rate of interest should \$8600 be invested for one year in order to yield \$301 in interest? ..... %.

(19) If the population of a town increases from 7700 to 8008 people in a year, at what annual rate does the population increase? ..... %.

*(20) If 10 liters are equivalent to 2.64 gallons, estimate the cost of 14½ gallons of gasoline at 7½¢ a liter. \$.....

(21) Find the cost of 132 gallons of gasoline at 8.2¢ a liter. \$.....

(22) How many liters of gasoline can be bought for \$10.89 at 33¢ a gallon? ..... liters.

(23) Find the tax on 625 liters of gasoline at 8¢ a gallon. \$.....

(24) Of 655 boys in a school, 466 take mathematics, 177 take physics, and 188 take neither. How many take both? .....

(25) How many take physics only? .....

(26) How many take mathematics only? .....

(27) 10½×9⅓= .....

(28) 11⅓×10½= .....

(29) 87÷1½= .....

*(30) Estimate the area of an equilateral triangle of altitude 10 inches. ..... sq. in.

(31) If 100 lire are equivalent to 16¢, convert \$42.24 into lire. ..... lire.

(32) 6% of 833⅓ is .....

(33) 3% of 313 billion dollars is \$.....

(34) One-millionth of ten billion is .....

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

(36) Find the area of a right triangle of base 72 in. and hypotenuse 75 in. ..... sq. in.

(37) How long does it take to cover 371 miles at 53 miles an hour? ..... hours.

(38) How fast must you drive in order to cover 36 miles in 48 minutes? ..... miles per hour.

(39) How far can you drive in 2 hours 50 minutes at 48 miles an hour? ..... miles.

*(40) How far can a rocket travel in 38½ hours at 13,200 feet a second? ..... miles.

(41) 143÷2⅜= .....

(42) 2½×38×34= .....

(43) Circle A has a radius of ½ in. Circle B has a radius of 1 in. The area of A is what per cent less than that of B? ..... %.

(44) The circumference of A is what percent less than that of B? ..... %.

(45) If locker A holds 25% more than locker B, and locker B holds 20% more than locker C, what per cent more does A hold than C? ..... %.

(46) If A holds 63 cu. ft., how much does C hold? ..... cu. ft.

(47) Triangle A has base 28 in. and altitude 123 in. Triangle B has base 150 in. and altitude 28 in. The area of A is what per cent less than that of B? ..... %.

(48) The altitude of A is what per cent less than the base of B? ..... %.

(49) 32% is what per cent more than 24? ..... %.

*(50) Estimate the radius of a circle of circumference 81 feet. ..... feet.

(51) $18\times13=$ .....

(52) $18\times13\frac{1}{2}=$ .....

(53) $18\frac{1}{2}\times13=$ .....

(54) $18\frac{1}{2}\times13\frac{1}{2}=$ .....

(55) $18\times14\frac{1}{2}=$ .....

(56) $243\div13\frac{1}{2}=$ .....

(57) $234\div6\frac{1}{2}=$ .....

(58) 33 is the square root of .....

(59) $1\frac{1}{2}$ is the fourth root of .....

*(60) Estimate the cost of a circular rug of circumference 81 feet at $5.55 a square yard. $.....

(61) Find the tax on $9\frac{1}{3}$ million gallons of gasoline at $10\frac{1}{2}$¢ a gallon. $.....

(62) If the tax on fourteen million gallons of gasoline is $910,000, find the tax on one thousand gallons. $.....

(63) How many gallons of gasoline must be taxed at $8\frac{1}{2}$¢ a gallon to yield $68,000 in revenue? ..... gallons.

(64) If 1080 pegs cost $81, find the cost per thousand. $.....

(65) If 650 pegs cost $143, find the cost per hundred. .....

(66) If pegs cost $144 a thousand, how many can be bought for $54? .....

(67) If pegs cost $144 a thousand, find the cost of 625 pegs. $.....

(68) A pair of dice is rolled. Find the probability that neither 2 nor 12 will show. .....

(69) $39^2+39=$ .....

*(70) If five furlongs are equivalent to 1100 yards, how long will it take a car to cover 616 miles at a speed of 440 furlongs per hour? ..... hours.

(71) $(94\times44)-(86\times47)=$ .....

(72) $41^2-39^2=$ .....

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

(74) What is the probability that both balls are green? .....

(75) What is the probability that both balls are red? .....

(76) What is the probability that at least one of the two balls is green? .....

(77) The perimeter of a square is increased from $34\frac{1}{2}$in. to $46\frac{1}{2}$ in. Find the corresponding increase in the area. ..... sq. in.

(78) The altitude of a right triangle is 12 in. and the hypotenuse is $12\frac{1}{2}$ in. Find the area. ..... sq. in.

(79) $14^3-13^3=$ .....

*(80) Estimate the cube root of 21,952. .....

The University of Texas Interscholastic League
Number Sense Test, Series X-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) 1332—866= .....

(2) 585+747—868= .....

(3) 18×23= .....

(4) 24⅜×18= .....

(5) 3% of 1666⅔ is .....

(6) (67×46)—(22×134)= .....

(7) 42÷2⅛= .....

(8) 6¾ is what per cent less than 9? ..... %.

(9) 16⅛—8⅝—3¾+9⅞= .....

*(10) Estimate the revenue obtainable by taxing 8,335,000 cartons of cigarettes at 86.3¢ a carton. $.....

(11) 1666⅔÷3⅓= .....

(12) If sausage sticks weighing ⅝ oz. each sell three for a quarter, what is the equivalent selling price per pound? $.....

(13) If 10 liters are equivalent to 2.64 gallons, then 22½ liters are equivalent to ..... gallons.

(14) 27½ liters are equivalent to ..... gallons.

(15) 66 gallons are equivalent to ..... liters.

(16) Find the cost of 33 gallons of gasoline at 8⅓¢ a liter. $.....

(17) Find the cost in dollars of 16½ gallons of gasoline at one peso per liter, assuming that 12½ pesos are equivalent to one dollar. $.....

(18) Find the cost in pesos of 18 gallons of gasoline that sells for 28¢ a gallon. ..... pesos.

(19) Three-millionths of five billion is .....

*(20) If one mile is equivalent to 1.61 kilometers, estimate the cost in dollars for fuel for a trip of 483 kilometers in a car getting 16 miles to the gallon, assuming that fuel cost 4¼ pesos per gallon. $.....

(21) How far can you drive in 11 hours 40 minutes at 54 miles an hour? ..... miles.

(22) How long does it take to cover 315 miles at 54 miles an hour? ..... hours.

(23) How fast must you drive in order to cover 315 miles in 11 hours 40 minutes? ..... miles an hour.

(24) Find the cost of fuel at 28¢ a gallon for a trip of 11 hours 25 minutes at 54 miles an hour in a car that gets 18 miles to the gallon. $.....

(25) How far can you drive in 32 minutes at 7½ miles an hour? ..... miles.

(26) 630÷11⅔= .....

(27) At what speed must you drive in order to cover 649 miles in 9 hours 50 minutes? ..... miles an hour.

(28) How long can you drive at 58 miles an hour in a car getting 14½ miles to the gallon on an expenditure of $6.38 for fuel costing 29¢ a gallon? ..... hours.

(29) How many liters of gasoline can be bought for $6.49 at 9⅝¢ a liter? ..... liters.

*(30) Estimate the area of an equilateral triangle of altitude 15 in. ..... sq. in.

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

(32) 649÷19⅜= .....

(33) 18⅓—9 5/9+7 2/9—11 7/9= .....

(34) 5⅜×8¾= .....

(35) (7¾×6⅞)—(15½×1$\frac{7}{18}$)= .....

(36) 8¾×2 2/7×5⅜= .....

(37) Find the tax on 8,750,000 gallons of gasoline at 5.6¢ a gallon. $.....

(38) If the tax on 8,750,000 gallons of gasoline is $525,000, find the tax on one gallon. .....¢.

(39) How many gallons of gasoline must be taxed at 6½¢ a gallon to yield $273,000 in revenue? ..... gallons.

*(40) Estimate the time required for a rocket traveling 15,500 feet a second to cover 1000 miles. ..... minutes.

(41) If 440 pegs cost $66, find the cost per thousand. $.....

(42) If pegs cost $68 a thousand, how many can be bought for $119? .....

(43) Truck B hauls 20% more than truck A; truck C hauls 32% more than truck A. What per cent more does C haul than B? .....%.

(44) ½ is what per cent of 6¼? ..... %.

(45) 16 is what per cent less than 21⅛? ..... %.

(46) 21 is what per cent more than 17½? ..... %.

(47) Of 633 girls in a school, 366 take English, 188 take history, and 177 take neither. How many take both? .....

(48) How many do not take English? .....

(49) How many take history only? .....

*(50) If one mile is equivalent to 1.61 kilometers, and one square mile is equivalent to 640 acres, estimate the number of square kilometers contained in 10,000 acres. ..... square kilometers.

(51) Subtract $24.75 from $41.32. $.....

(52) Subtract the sum of $18.46 and $6.27 from $41.31. $.....

(53) Subtract $24.77 from the sum of $28.46 and $12.88 $.....

(54) Subtract the sum of $18.27 and $6.46 from the sum of $12.46 and $28.88. $.....

(55) If $1250 earns $37.50 in interest in a year, how much should $6250 earn? $.....

(56) The square root of (50×162) is .....

(57) The square root of (1/16+1/9) is .....

(58) The square root of (7×3×2×7×2×3) is .....

(59) ¾ is to 2 as 4½ is to .....

*(60) If a trip which is usually made in 11 hours 48 minutes is made at a speed 42% slower than usual, how long will the trip take? ..... hours.

(61) If a trip which is usually made in 14 hours is made at speed 40% faster than usual, how long will the trip take? ..... hours.

(62) If a trip which is usually made in 14 hours is made at a speed 30% slower than usual, how long will the trip take? ..... hours.

(63) Find the sixth term of the sequence ¾, ¼, 1/12, 1/36 . . . .

(64) A car traveling 52.5 miles an hour is moving how many feet a second? ..... feet.

(65) How long will it take a car traveling 67.5 miles an hour to cover 2970 feet? ..... seconds.

(66) How long will it take a car traveling 105.6 feet a second to cover 54 miles? ..... minutes.

(67) How far can a car travel in 5 minutes at 45 miles an hour? ..... feet.

(68) Find the area of a trapezoid of altitude 21 in. and bases 18 in. and 26 in. ..... sq. in.

(69) Find the lower base of a trapezoid of upper base 29 in., altitude 16 in., and area 416 sq. in. ..... in.

*(70) Estimate the area of an equilateral triangle of side 22½ in. ..... sq. in.

(71) A box contains 12 red balls and 9 white balls. Two balls are taken at random from the box. Find the probability that one is red and one is white. .....

(72) Find the probability that both are white. .....

(73) Find the probability that at least one is red. .....

(74) Two cards are taken at random from an ordinary deck of 52 playing cards. Find the probability that the two cards do not belong to the same suit. .....

(75) The sides of a triangle are 20 in., 48 in., and 52 in. in length. Find the area. ..... sq. in.

(76) The area of a square is increased from 132¼ sq. in. to 196 sq. in. Find the corresponding increase in the perimeter. ..... in.

(77) An increase of 50% in speed is accompanied by a decrease of .....% in time.

(78) A decrease of 25% in speed is accompanied by an increase of .....% in time.

(79) A decrease of 33⅓% in speed is accompanied by an increase of .....% in time.

*(80) The area of a square is increased from 182¼ sq. in. to 256 sq. in. Estimate the corresponding increase in the diagonal. ..... in.

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

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Stop—Wait for Signal

(1) 8388+878= .....

(2) 7133—549= .....

(3) 3⅛% of $272 is $.....

(4) 855+1377—989= .....

(5) 32×24⅜= .....

(6) 242÷2¾= .....

(7) The square root of (1/144+1/256) is .....

(8) The square root of (33×297) is .....

(9) 9½ is the square root of .....

*(10) Estimate the tax on 442.5 acres of land valued at $270 an acre if the tax rate is 1⅜%. $.....

(11) Find the perimeter of a square of area 90¼ sq. in. ..... in.

(12) Find the altitude of a triangle of area 90¼ sq. in. and base 19 in. ..... in.

(13) 81⅝—48⅝+39⅞= .....

(14) (26×27)—(23×23)= .....

(15) A farmer bought 63¼ acres of land at $124 an acre and 124 fruit trees at $11.75 each. How much did he spend? $.....

(16) Find the interest on $8600 for one year at 4½% a year. $.....

(17) How much should be invested for one year at 4½% in order to yield $243 in interest? $.....

(18) At what annual rate of interest should $5400 be invested for one year in order to yield $297 in interest? ..... %.

(19) If the population of a town declines from 8020 to 7619 people in a year, at what annual rate does the population decline? ..... %.

*(20) If 10 liters are equivalent to 2.64 gallons, estimate the cost of 21¾ gallons of gasoline at 11¼¢ a liter. $.....

(21) Find the cost of 66 gallons of gasoline at 8.4¢ a liter. $.....

(22) How many liters of gasoline can be bought for $14.52 at 44¢ a gallon? ..... liters.

(23) Find the tax on 375 liters of gasoline at 8⅓¢ a gallon. $.....

(24) Of 611 boys in a school, 385 take mathematics, 257 take physics, and 186 take neither. How many take both? .....

(25) How many take mathematics only? .....

(26) How many do not take physics? .....

(27) 2¼×3⅛= .....

(28) 1⅛×12 4/9= .....

(29) 27÷2¼= .....

*(30) Estimate the area of an equilateral triangle of altitude 18 in. ..... sq. in.

(31) If 100 lire are equivalent to 16¢, convert $63.36 into lire. ..... lire.

(32) 9% of 833⅓ is .....

(33) 3½% of 314 billion dollars is $.....

(34) One-millionth of three hundred billion is .....

(35) Write in figures: eleven-sixteenths billion. .....

(36) Find the area of a right triangle of altitude 36 in. and hypotenuse 37½ in. ..... sq. in.

(37) How long does it take to cover 376 miles at 47 miles an hour? ..... hours.

(38) How fast must you drive in order to cover 4⅛ miles in 5⅜ minutes? ..... miles an hour.

(39) How far can you drive in 5⅜ minutes at 30 miles an hour? ..... miles.

*(40) How far can a rocket travel in 19 hours 15 minutes at 6600 feet a second? ..... miles.

(41) 143÷1 3/10= .....

(42) 7½×88×5⅓= .....

(43) Circle A has a radius of 3 in. Circle B has a radius of 5 in. The area of A is what per cent less than that of B? ..... %.

(44) The circumference of A is what per cent less than that of B? ..... %.

(45) If locker A holds 50% more than locker B, and locker B holds 32% more than locker C, what per cent more does A hold than C? ..... %.

(46) If A holds 99 cu. ft., how much does C hold? ..... cu. ft.

(47) Triangle A has base 26 in. and altitude 61½ in. Triangle B has base 75 in. and altitude 26 in. The area of A is what per cent less than that of B? ..... %.

(48) The altitude of A is what per cent less than the base of B?..... %.

(49) 48⅝ is what per cent more than 36? ..... %.

*(50) Estimate the radius of a circle of circumference 121½ feet. ..... feet.

(51) $22\times14=$ .....

(52) $22\times14\frac{1}{2}=$ .....

(53) $22\frac{1}{2}\times14=$ .....

(54) $22\frac{1}{2}\times14\frac{1}{2}=$ .....

(55) $22\times13\frac{1}{2}=$ .....

(56) $319\div14\frac{1}{2}=$ .....

(57) $315\div22\frac{1}{2}=$ .....

(58) 28 is the square root of .....

(59) ⅔ is the cube root of .....

*(60) Estimate the cost of a circular rug of circumference 81 feet at $6.66 a square yard. $.....

(61) Find the tax on 18⅝ million gallons of gasoline at 5¼¢ a gallon. $.....

(62) If the tax on seven million gallons of gasoline is $455,000, find the tax on one thousand gallons. $.....

(63) How many gallons of gasoline must be taxed at 8½¢ a gallon to yield $136,000 in revenue? ..... gallons.

(64) If 540 pegs cost $40.50, find the cost per thousand. $.....

(65) If 325 pegs cost $71.50, find the cost per hundred. .....

(66) If pegs cost $144 a thousand, how many can be bought for $108? .....

(67) If pegs cost $144 a thousand, find the cost of 375 pegs. $.....

(68) A pair of dice is rolled. Find the probability that neither 3 nor 11 will show. .....

(69) $49^2+49=$ .....

*(70) If five furlongs are equivalent to 1100 yards, how long will it take a car to cover 644 miles at a speed of 448 furlongs per hour? ..... hours.

(71) $(96\times38)-(75\times48)=$ .....

(72) $61^2-59^2=$ .....

(73) A box contains 8 green balls and 7 red balls. Three balls are taken at random from the box. Find the probability that one is green and two are red. .....

(74) What is the probability that two are green and one is red? .....

(75) What is the probability that all three balls are green? .....

(76) What is the probability that at least one of the three balls is red? .....

(77) The perimeter of a square is increased from 33½ in. to 45½ in. Find the corresponding increase in the area. ..... sq. in.

(78) The base of a right triangle is 14⅜ in. and the hypotenuse is 15 in. Find the perimeter. ..... in.

(79) $17^3-16^3=$ .....

*(80) Estimate the cube root of 5832. .....

The University of Texas Interscholastic League

Number Sense Test, Series X-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) 1422—788= .....

(2) 676+746—787= .....

(3) 17×24= .....

(4) 16⅝×24= .....

(5) 12% of 833⅓ is .....

(6) (38×91)—(45×76)= .....

(7) 66÷4 5/7= .....

(8) 3⅜ is what per cent less than 4½? ..... %.

(9) 21¼—13⅝+9⅛—14⅞= .....

*(10) Estimate the revenue obtainable by taxing 4,167,500 cartons of cigarettes at 43.15¢ a carton. $.....

(11) 833⅓÷1⅜= .....

(12) If sausage sticks weighing ⅝ oz. each sell four for a quarter, what is the equivalent selling price per pound? $.....

(13) If 10 liters are equivalent to 2.64 gallons, then 32½ liters are equivalent to ..... gallons.

(14) 25 liters are equivalent to ..... gallons.

(15) 13⅛ gallons are equivalent to ..... liters.

(16) Find the cost of 26⅝ gallons of gasoline at 8¼¢ a liter. $.....

(17) Find the cost in dollars of 8¼ gallons of gasoline at one peso per liter, assuming that 12½ pesos are equivalent to one dollar. $ .....

(18) Find the cost in pesos of 30 gallons of gasoline that sells for 28¢ a gallon. ..... pesos.

(19) Seven-millionths of seven billion is .....

*(20) If one mile is equivalent to 1.61 kilometers, estimate the cost in dollars of fuel for a trip of 579.6 kilometers in a car getting 16 miles to the gallon, assuming that fuel costs 4¼ pesos per gallon. $ .....

(21) How far can you drive in 23 hours 20 minutes at 54 miles an hour? ..... miles.

(22) How long does it take to cover 536 miles at 67 miles an hour? ..... hours.

(23) How fast must you drive in order to cover 550 miles in 8 hours 20 minutes? ..... miles an hour.

(24) Find the cost of fuel at 28¢ a gallon for a trip of 11 hours 25 minutes at 55½ miles an hour in a car that gets 18½ miles to the gallon. $.....

(25) How far can you drive in 32 minutes at 22½ miles an hour? ..... miles.

(26) 1260÷23⅓= .....

(27) At what speed must you drive in order to cover 715 miles in 10 hours 50 minutes? ..... miles an hour.

(28) How long can you drive at 54 miles an hour in a car getting 13½ miles to the gallon on an expenditure of $8.58 for fuel costing 33¢ a gallon? ..... hours.

(29) How many liters of gasoline can be bought for $12.98 at 9⅝¢ a liter? ..... liters.

*(30) Estimate the area of an equilateral triangle of altitude 16 in. ..... sq. in.

(31) Write in figures: twelve and three-sixteenths billion. .....

(32) 1298÷19⅔= .....

(33) 27 1/9—18⅓+9 5/9—7 2/9+11 7/9= .....

(34) 6⅜×8⅓= .....

(35) (6⅜×14⅜)—(3 3/10×12¾)= .....

(36) 8⅓×3 3/5×6 3/5= .....

(37) Find the tax on 8,750,000 gallons of gasoline at 8.4¢ a gallon. $ .....

(38) If the tax on 8,750,000 gallons of gasoline is $700,000, find the tax on one gallon. .....¢.

(39) How many gallons of gasoline must be taxed at 6½¢ a gallon to yield $327,600 in revenue? ..... gallons.

*(40) Estimate the time required for a rocket traveling 15,500 feet a second to cover 2500 miles. ..... minutes.

(41) If 660 pegs cost \$99, find the cost per thousand. \$.....

(42) If pegs cost \$68 a thousand, how many can be bought for \$238? .....

(43) Truck B hauls 40% more than truck A; truck C hauls 68% more than truck A. What per cent more does C haul than B? ..... %.

(44) 1½ is what per cent of 6¼? ..... %.

(45) 10⅜ is what per cent less than 14 2/9? ..... %.

(46) 4⅛ is what per cent more than 3½? ..... %.

(47) Of 612 girls in a school, 356 take English, 178 take History, and 157 take neither. How many take both? .....

(48) How many take only one of the two subjects? .....

(49) How many do not take history? .....

*(50) If one mile is equivalent to 1.61 kilometers, and one square mile is equivalent to 640 acres, estimate the number of square kilometers contained in 8000 acres. ..... square kilometers.

(51) Subtract \$25.65 from \$42.22. \$.....

(52) Subtract the sum of \$18.96 and \$6.77 from \$42.31. \$.....

(53) Subtract \$24.87 from the sum of \$28.51 and \$12.93. \$.....

(54) Subtract the sum of \$18.37 and \$6.56 from the sum of \$12.56 and \$28.98. \$.....

(55) If \$1750 earns \$52.50 in interest in a year, how much should \$8750 earn? \$.....

(56) The square root of (98×450) is .....

(57) The square root of $(16\times64+9\times64)$ is .....

(58) The cube root of $(21\times12\times6\times49)$ is .....

(59) ⅜ is to 1 as 2¼ is to .....

*(60) If a trip which is usually made in 5 hours 54 minutes is made at a speed 42% slower than usual, how long will the trip take? ..... hours.

(61) If a trip which is usually made in 21 hours is made at a speed 40% faster than usual, how long will the trip take? ..... hours.

(62) If a trip which is usually made in 21 hours is made at a speed 30% slower than usual, how long will the trip take? ..... hours.

(63) Find the sixth term of the sequence 1.35, 1.62, 1.89, 2.16, — .....

(64) A car traveling 50 miles an hour is moving how many feet a second? .....

(65) How long will it take a car traveling 52.5 miles an hour to cover 2310 feet? ..... seconds.

(66) How long will it take a car traveling 55 feet a second to cover 7½ miles? ..... minutes.

(67) How far can a car travel in 7 minutes at 45 miles an hour? ..... feet.

(68) Find the area of a trapezoid of altitude 23 in. and bases 19 in. and 27 in. ..... sq. in.

(69) Find the altitude of a trapezoid of bases 29 in. and 23 in. and area 416 sq. in. ..... in.

*(70) Estimate the altitude of an equilateral triangle of side 23 in. ..... in.

(71) A box contains 8 red balls and 8 white balls. Three balls are taken at random from the box. Find the probability that one is red and two are white. .....

(72) What is the probability that all three are white? .....

(73) What is the probability that at least one of the three balls is red? .....

(74) Two cards are taken at random from an ordinary deck of 52 playing cards. Find the probability that the two cards belong to the same suit. .....

(75) The sides of a triangle are 27 in., 36., and 45 in. Find the area ..... sq. in.

(76) The area of a square is decreased from 132¼ sq. in. to 72¼ sq. in. Find the corresponding decrease in the perimeter. ..... in.

(77) An increase of 33⅓% in speed is accompanied by a decrease of ..... % in time.

(78) A decrease of 40% in speed is accompanied by an increase of ..... % in time.

(79) A decrease of 36% in time is accompanied by an increase of ..... % in speed.

*(80) The diagonal of a square is increased from 23½ in. to 31¼ in. Estimate the corresponding increase in the side. ..... 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 X-1

(1)	55
(2)	8
(3)	423
(4)	100
(5)	209
(6)	50
(7)	50
(8)	504
(9)	1¼
*(10)	61.75—68.25
(11)	150
(12)	13½
(13)	18
(14)	26.67
(15)	50.00
(16)	16,125,000
(17)	39.78
(18)	38.88
(19)	41.99
*(20)	1692—1870
(21)	1/12
(22)	4½
(23)	9
(24)	12
(25)	9⅜
(26)	29
(27)	22
(28)	5⅓
(29)	76
*(30)	2.13—2.36
(31)	270
(32)	280
(33)	280
(34)	289 1/3
(35)	320
(36)	2700
(37)	18
(38)	37⅛
(39)	28⅞
*(40)	608—672
(41)	6000
(42)	6500
(43)	55
(44)	5880
(45)	47⅛
(46)	5 2/3
(47)	4½
(48)	8
(49)	34
*(50)	42.35—46.82
(51)	5 3/5
(52)	5 3/5
(53)	11 1/5
(54)	25
(55)	20
(56)	80
(57)	20
(58)	56
(59)	25
*(60)	1646—1820
(61)	15,000
(62)	360
(63)	3¼
(64)	2380
(65)	4400
(66)	1321¼
(67)	350
(68)	34.29
(69)	34.29
*(70)	81.7—90.3
(71)	21
(72)	91⅓
(73)	220
(74)	3/5
(75)	1/10
(76)	3/10
(77)	141
(78)	705
(79)	11⅓
*(80)	257—285

Key to Number Sense TEST SERIES X-2

(1)	1021
(2)	645
(3)	389
(4)	288
(5)	302
(6)	8
(7)	40
(8)	2¼
(9)	6¼
*(10)	53,520—59,154
(11)	264
(12)	21
(13)	22
(14)	1296
(15)	22½
(16)	3240
(17)	360
(18)	3¾
(19)	4800
*(20)	535,200—591,540
(21)	9,625,000,000
(22)	1/9
(23)	3.29
(24)	6.78
(25)	5.07
(26)	1900
(27)	5700
(28)	475
(29)	47½
*(30)	1421—1573
(31)	4
(32)	3
(33)	715
(34)	224
(35)	25
(36)	20
(37)	15
(38)	15
(39)	85
*(40)	36—40
(41)	2½
(42)	2.50
(43)	266
(44)	14
(45)	45
(46)	154
(47)	1260
(48)	2021.04
(49)	1461.60
*(50)	384—426
(51)	49
(52)	45
(53)	55
(54)	15
(55)	38½
(56)	8.92 or 8.93
(57)	7
(58)	602.21
(59)	5
*(60)	8—9
(61)	15.18
(62)	6.98
(63)	6.98
(64)	18
(65)	156¼
(66)	42⅞
(67)	23
(68)	8
(69)	120
*(70)	63,865—70,589
(71)	186
(72)	150
(73)	85
(74)	143
(75)	150
(76)	35/66
(77)	7/22
(78)	31/66
(79)	11/26
*(80)	32.9—36.4

Key to Number Sense TEST SERIES X-3

(1)	232
(2)	143
(3)	57
(4)	182
(5)	16
(6)	1 5/8
(7)	40
(8)	190
(9)	16
*(10)	63.95—70.69
(11)	234
(12)	116
(13)	585
(14)	187.20
(15)	2½
(16)	9360
(17)	156
(18)	32
(19)	8
*(20)	95,760—105,840
(21)	0
(22)	45
(23)	900
(24)	4
(25)	12
(26)	28½
(27)	1150
(28)	124.95
(29)	124.94
*(30)	13.5—14.9
(31)	55,000
(32)	550
(33)	44
(34)	22
(35)	88
(36)	384
(37)	228
(38)	211.20
(39)	500
*(40)	11.5—12.8
(41)	4
(42)	3
(43)	15.75
(44)	15.64
(45)	25
(46)	20
(47)	80
(48)	20
(49)	20
*(50)	15—17
(51)	609
(52)	462
(53)	64
(54)	10
(55)	3960
(56)	3330
(57)	4906
(58)	14,476
(59)	89
*(60)	3304—3652
(61)	30
(62)	30
(63)	125
(64)	2635.00
(65)	8
(66)	2.76
(67)	1840
(68)	1850
(69)	3,770,000
*(70)	7.6—8.4
(71)	4,960,000
(72)	2/3
(73)	27
(74)	15 5/8
(75)	7/9
(76)	992
(77)	25
(78)	108
(79)	69.834
*(80)	11.4—12.6

Key to Number Sense TEST SERIES X-4

(1)	343
(2)	123
(3)	234
(4)	34
(5)	18
(6)	2⅛
(7)	249
(8)	68
(9)	650
*(10)	1425—1575
(11)	13.46
(12)	5.04
(13)	5.6
(14)	16
(15)	73.31
(16)	13.45
(17)	15
(18)	13.46
(19)	36
*(20)	38.2—42.4
(21)	37½
(22)	2.70
(23)	$1.05
(24)	1600
(25)	21
(26)	14
(27)	14
(28)	14
(29)	65
*(30)	498,750—551,250
(31)	4000
(32)	37½
(33)	37½
(34)	60
(35)	69
(36)	20
(37)	75
(38)	25
(39)	12
*(40)	9.26—10.26
(41)	20
(42)	11 3/7
(43)	8,125,000
(44)	13
(45)	2¾
(46)	26.25
(47)	51
(48)	200
(49)	165
*(50)	61.7—68.3
(51)	438
(52)	8
(53)	44
(54)	110
(55)	30
(56)	55
(57)	50
(58)	37½
(59)	2560
*(60)	76—84
(61)	48
(62)	45
(63)	343
(64)	1520
(65)	15
(66)	60
(67)	781,000
(68)	8
(69)	198,400
*(70)	39—44
(71)	7/10
(72)	2/3
(73)	125
(74)	5/9
(75)	5/9
(76)	6750
(77)	72
(78)	15/26
(79)	75
*(80)	188—209

Key to Number Sense TEST SERIES X-5

(1)	321.94
(2)	144.96
(3)	17
(4)	1253
(5)	537
(6)	24
(7)	20
(8)	80
(9)	56¼
*(10)	1560—1725
(11)	50
(12)	12½
(13)	2⅝
(14)	180
(15)	7000
(16)	308
(17)	8600
(18)	3½
(19)	4
*(20)	3.91—4.33
(21)	41
(22)	125
(23)	13.20
(24)	176
(25)	1
(26)	290
(27)	98
(28)	119
(29)	58
*(30)	54—61
(31)	26,400
(32)	50
(33)	9,390,000,000
(34)	10,000
(35)	17,437,500
(36)	756
(37)	7
(38)	45
(39)	136
*(40)	329,175—363,825
(41)	55
(42)	3230
(43)	75
(44)	50
(45)	50
(46)	42
(47)	18
(48)	18
(49)	35
*(50)	12.2—13.6
(51)	234
(52)	243
(53)	240½
(54)	249¾
(55)	261
(56)	18
(57)	36
(58)	1089
(59)	5 1/16
*(60)	305.88—338.08
(61)	980,000
(62)	65
(63)	800,000
(64)	75
(65)	22
(66)	375
(67)	90
(68)	17/18
(69)	1560
*(70)	10.6—11.8
(71)	94
(72)	160
(73)	8/15
(74)	4/15
(75)	1/5
(76)	4/5
(77)	60¾
(78)	21
(79)	547
*(80)	26.6—29.4

Key to Number Sense TEST SERIES X-6

(1)	466
(2)	464
(3)	414
(4)	444
(5)	50
(6)	134
(7)	15
(8)	25
(9)	13⅝
*(10)	6,833,450–7,552,760
(11)	500
(12)	2.00
(13)	5.94
(14)	7.26
(15)	250
(16)	10.25
(17)	5.00
(18)	63
(19)	15,000
*(20)	6.05—6.70
(21)	630
(22)	5 5/6
(23)	27
(24)	9.59
(25)	4
(26)	54
(27)	66
(28)	5⅓
(29)	66
*(30)	123–137
(31)	11,312,500,000
(32)	33
(33)	4 2/9
(34)	49
(35)	31
(36)	112
(37)	490,000
(38)	6
(39)	4,200,000
*(40)	5.4—6.0
(41)	150
(42)	1750
(43)	10
(44)	8
(45)	25
(46)	20
(47)	98
(48)	267
(49)	90
*(50)	38.5—42.5
(51)	16.57
(52)	16.58
(53)	16.57
(54)	16.61
(55)	187.50
(56)	90
(57)	5/12
(58)	42
(59)	12
*(60)	19.3—21.4
(61)	10
(62)	20
(63)	1/324
(64)	77
(65)	30
(66)	45
(67)	19,800
(68)	462
(69)	23
*(70)	208—230
(71)	18/35
(72)	6/35
(73)	29/35
(74)	13/17
(75)	480
(76)	10
(77)	33 1/3
(78)	33 1/3
(79)	50
*(80)	3.3—3.7

Key to Number Sense TEST SERIES X-7

(1)	9266
(2)	6584
(3)	8.50
(4)	1243
(5)	780
(6)	88
(7)	5/48
(8)	99
(9)	90¼
*(10)	1560—1725
(11)	38
(12)	9½
(13)	72 9/16
(14)	173
(15)	9300
(16)	387
(17)	5400
(18)	5½
(19)	5
*(20)	5.86—6.50
(21)	21
(22)	125
(23)	8.25
(24)	217
(25)	168
(26)	354
(27)	7½
(28)	14
(29)	12
*(30)	177—197
(31)	39,600
(32)	75
(33)	10,990,000,000
(34)	300,000
(35)	687,500,000
(36)	189
(37)	8
(38)	45
(39)	2 4/5
*(40)	82,294—90,956
(41)	110
(42)	3520
(43)	64
(44)	40
(45)	98
(46)	50
(47)	18
(48)	18
(49)	35
*(50)	18.3—20.4
(51)	308
(52)	319
(53)	315
(54)	326¼
(55)	297
(56)	22
(57)	14
(58)	784
(59)	8/27
*(60)	367.05—405.70
(61)	980,000
(62)	65
(63)	1,600,000
(64)	75
(65)	22
(66)	750
(67)	54
(68)	8/9
(69)	2450
*(70)	10.9—12.1
(71)	48
(72)	240
(73)	24/65
(74)	28/65
(75)	8/65
(76)	57/65
(77)	59¼
(78)	33 3/5
(79)	817
*(80)	17—19

Key to Number Sense TEST SERIES X-8

(1)	634
(2)	635
(3)	408
(4)	399
(5)	100
(6)	38
(7)	14
(8)	25
(9)	1⅞
*(10)	1,708,382–1,888,190
(11)	500
(12)	1.25
(13)	8.58
(14)	6.6
(15)	50
(16)	8.25
(17)	2.50
(18)	105
(19)	49,000
*(20)	7.26—8.04
(21)	1260
(22)	8
(23)	66
(24)	9.59
(25)	12
(26)	54
(27)	66
(28)	6½
(29)	132
*(30)	140—156
(31)	12,187,500,000
(32)	66
(33)	22 8/9
(34)	55
(35)	51
(36)	198
(37)	735,000
(38)	8
(39)	5,040,000
*(40)	13.5—15.0
(41)	150
(42)	3500
(43)	20
(44)	24
(45)	25
(46)	20
(47)	79
(48)	376
(49)	434
*(50)	30.8—34.0
(51)	16.57
(52)	16.58
(53)	16.57
(54)	16.61
(55)	262.50
(56)	210
(57)	40
(58)	42
(59)	6
*(60)	9.6—10.7
(61)	15
(62)	30
(63)	2.70
(64)	73 1/3
(65)	30
(66)	12
(67)	27,720
(68)	529
(69)	16
*(70)	18.9—20.9
(71)	2/5
(72)	1/10
(73)	9/10
(74)	4/17
(75)	486
(76)	12
(77)	25
(78)	66 2/3
(79)	56¼
*(80)	5.2—5.8