TruePath Academics
Junior High Number Sense Test

Directions: 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 (*) require approximate integral answers; any answer to a starred problem that is within five percent of the exact answer will be scored correct; all other problems require exact answers.

Stop - Wait for Signal!

(1) 736 - 637 = _____

(2) 36 x 5 = _____

(3) 75 + 66 = _____

(4) 500 ÷ 5 = _____

(5) $\frac{7}{10} - \frac{1}{8}$ = _____

(6) 0.25 x 104 = _____

(7) 39^2 = _____

(8) 0.915 ÷ 5 = _____ decimal

(9) 39 + 40 + 41 = _____

*(10) 397 x 514 - 96 = _____

(11) 49 x 51 = _____

(12) If 11 is the mean of 12, 16 and n, n = _____

(13) MCMLV = _____ (Arabic numeral)

(14) 39 x 15 = _____

(15) 48 x 12 = _____

(16) 76 x 36 = _____

(17) $35^2 + 15^2$ = _____

(18) Which is smaller: $\frac{1}{4}$ or 0.27 ? _____

(19) 0.60 x 54 + 0.40 x 54 = _____

*(20) 47800 ÷ $8\frac{1}{3}$ %= _____

(21) 22 x 22 = _____

(22) If $q(x) = -4x^2 + 15$, then q(4) = _____

(23) Thirteen-sixteenths = % _____ percent

(24) 6 x $\frac{2}{11}$ = _____ mixed number

(25) $10\frac{7}{12} - 2\frac{3}{4}$ = _____

(26) 25 weeks = _____ (days)

(27) The positive square root of 400 is _____

(28) If 14 ? cost 2.76$, then 7 ? cost _____ $

(29) If 22 + 4x is 46, then x = _____

*(30) 33 x 35 x 37 = _____

(31) 75 x 273 = _____

(32) The LCM of 54 and 27 is _____

(33) 11 gallons = _____ quarts

(34) The product of the LCM and GCD of 18 and 15 is _____

(35) $63\frac{7}{11}$ %= _____ common fraction

(36) If n is to 18 as 30 is to 54, then n = _____

(37) How many whole numbers will evenly divide into 72? _____

(38) If the circumference of a circle is halved, then the area of the old circle is multiplied by _____

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(39) 33 (base 4) = _____ base 2

*(40) $333\frac{1}{3}$ x 246 = _____

(41) 11 (base 6) = _____ base 10

(42) 40586 ÷ 9 has a remainder of _____

(43) 104094 ÷ 11 has a remainder of _____

(44) What is the area of a rhombus with diagonals 20 and 27? _____

(45) 201 (base 4) + 23 (base 4) = _____ base 4

(46) If 16 - 8x _____

(47) The surface area of a cube with edge 6 is _____

(48) 600 cm^2 = _____ m^2

(49) From one vertex of a convex hexagon, how many triangles partition the polygon? _____

*(50) $6999\pi^2$ = _____

(51) In the sequence: 1, 4, a, 16, 25, b, 49, . . . 2a - b = _____

(52) 111 x 455 = _____

(53) An equilateral triangle has side 4-cm. Write its area as $a\sqrt{3}$ and find a. _____ cm^2

(54) What is the area of a parallelogram with opposite sides each 24 and altitude between them 24? _____

(55) $\sqrt{99856}$ = _____

(56) A right triangle has legs 24 and 7. The hypotenuse is _____

(57) $\frac{1+2+3+...+8}{2+4+6+...+16}$ _____

(58) $(13^2 + 18 \text{ x } 9) \div 8$ has a remainder of _____

(59) 242 x 101 = _____

*(60) 24^4 x 101 ÷ 3^3 = _____

(61) A bag contains 14 blue, 7 green, and 21 red marbles. Find the probability of choosing a red marble. _____

(62) $\frac{7!}{5!}$ - 12 = _____

(63) 0.0222 . . . = _____ common fraction

(64) $\sqrt{1.69}$ = _____ decimal

(65) A right circular cylinder has radius 7 and length 12. Its volume equals $k\pi$. Find k. _____

(66) What is the distance between the points (8, 1) and (5, -3)? _____

(67) If $8\frac{1}{2}$ %of 24 is 4%of n, then n = _____

(68) $\sqrt{576} - \sqrt{324}$ = _____

(69) $11\frac{1}{4} \div \frac{3}{4}$ _____

*(70) 374960 ÷ 250 = _____

(71) $12^2 + 60^2$ = _____

(72) $37\frac{1}{2}$ %= _____ common fraction

(73) (0.888 . . .) ÷ 0.666 . . . = _____

(74) 1.5 x 14.12 = _____

(75) $18\frac{3}{4}$ %of 48 is the same as $6\frac{1}{4}$ %of _____

(76) 30^2 x 25 = _____

(77) 12^2 x 8^2 = _____

(78) $\frac{3}{7} + \frac{7}{3}$ = _____

(79) $(20\ 1/2)^2 - (15\ 1/2)^2$ = _____

*(80) 56 kilograms = _____ grams

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TruePath Academics Junior High Number Sense Test - Key

(1)	99	(21)	484	(41)	7	(61)	1/2
(2)	180	(22)	-49	(42)	5	(62)	30
(3)	141	(23)	325/4; 81 1/4; 81.25	(43)	1	(63)	1/45
(4)	100	(24)	1 1/11	(44)	270	(64)	1.3
(5)	23/40; 0.575	(25)	47/6; 7 5/6	(45)	230	(65)	588
(6)	26	(26)	175	(46)	-8	(66)	5
(7)	1521	(27)	20	(47)	216	(67)	51
(8)	0.183	(28)	1.38	(48)	0.06	(68)	6
(9)	120	(29)	6	(49)	4	(69)	15
*(10)	193764 - 214160	*(30)	40599 - 44871	*(50)	65624 - 72531	*(70)	1425 - 1574
(11)	2499	(31)	20475	(51)	-18	(71)	3744
(12)	5	(32)	54	(52)	50505	(72)	3/8
(13)	1955	(33)	44	(53)	4	(73)	4/3
(14)	585	(34)	270	(54)	576	(74)	21.18
(15)	576	(35)	7/11	(55)	316	(75)	144
(16)	2736	(36)	10	(56)	25	(76)	22500
(17)	1450	(37)	12	(57)	1/2; 0.5	(77)	9216
(18)	1/4	(38)	1/4; 0.25	(58)	3	(78)	2 16/21
(19)	54	(39)	1111	(59)	24442	(79)	180
*(20)	544921 - 602280	*(40)	77900 - 86100	*(60)	1179034 - 1303142	*(80)	53200 - 58800

Note: *(Number) x - y means an integer between x and y inclusive.

Fraction answers must be written as fractions, not decimals, unless the problem asks for a decimal.

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