The University Interscholastic League
Number Sense Test • HS SAC • 2005

Final _____ _____
2nd _____ _____
1st _____ _____
Score Initials

Contestant's Number _____

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 this 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 (*) 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.

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STOP -- WAIT FOR SIGNAL!

(1) $2005 + 5002 =$ _____

(2) $2005 \div 5 =$ _____

(3) $\$50.02 - \$20.05 = \$$_____

(4) $\frac{2}{5} \times \frac{5}{2} =$ _____

(5) $2 + 3 \times 5 - 7 =$ _____

(6) $12\frac{1}{2}\% =$ _____ (fraction)

(7) $\frac{1}{16} =$ _____(decimal)

(8) $25^2 =$ _____

(9) $2005 \times 5 - 2005 =$ _____

*(10) $987 - 123 + 564 =$ _____

(11) $42 \times 24 =$ _____

(12) $2\frac{3}{5} - 7\frac{1}{10} =$ _____ (mixed number)

(13) Which is smaller, $\frac{7}{11}$ or $\frac{11}{13}$? = _____

(14) $\frac{1}{2} - \frac{1}{6} - \frac{1}{12} =$ _____ (proper fraction)

(15) $7 \times 7 \times 7 =$ _____

(16) $1 + 3 + 5 + \ldots + 19 =$ _____

(17) $\frac{3}{(2^3)(5)} =$ _____ (decimal)

(18) $16 \times \frac{16}{19} =$ _____ (mixed number)

(19) 32 is _____% of 80

*(20) $205 \times 502 =$ _____

(21) $6 \times 6\frac{5}{6} =$ _____

(22) .414141... = _____ (proper fraction)

(23) 13579 ÷ 9 has a remainder of _____

(24) The number of positive integral divisors of 36 is _____

(25) .5 — .25 — .125 = _____ (proper fraction)

(26) 32 ounces = _____ pints

(27) $200_5 =$ _____$_{10}$

(28) $\left(\sqrt{64} - \sqrt{36}\right)^5 =$ _____

(29) The product of 4 and x equals the sum of 4 and x. Find x. _____

*(30) $97531 \div 209 =$ _____

(31) 72% of 36 is 18% of _____

(32) $2 + 4 \times 6 - 8 \div 10 =$ _____

(33) $F(x) = 2x^2 - 3x - 4$. Evaluate F(5). _____

(34) The set {F, U, N} has _____ subsets

(35) $143 \times 49 =$ _____

(36) GCD(15,21) + LCM(15,21) = _____

(37) A ticket costs \$5.75. 12 tickets cost \$ _____

(38) $\sqrt[3]{512} \div \sqrt{64} =$ _____

(39) $5.3 \times 4.7 =$ _____ (decimal)

*(40) $\sqrt{25252} =$ _____

(41) $92 \times 93 =$ _____

(42) $30 \times 11 + 22 \times 15 =$ _____

(43) If the area of an equilateral triangle is $3\sqrt{3}$ square inches then its height is _____ inches

(44) $7\frac{1}{7}\% =$ _____ (proper fraction)

(45) $2 + 4 + 6 + 8 + \ldots + 44 =$ _____

(46) $7! \div 5! =$ _____

(47) If $3x + y = 8$ and $2x - y = 10$, then $x =$ _____

(48) A hexagon has _____ sides

(49) $66 \div .75 =$ _____

*(50) $8^3 \times 5^3 =$ _____

(51) $47^2 + 40^2 - 7^2 =$ _____

(52) $2 + 1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \ldots =$ _____

(53) $\tan(225°) =$ _____

(54) 12 % of $433\frac{1}{3}$ is _____

(55) $121 \times 411 =$ _____

(56) $53 \times 57 + 4 =$ _____

(57) The smallest integer such that $2x - 3 > 4$ is _____

(58) When two dice are tossed, the probability that the sum of the faces will be 3 is _____

(59) $\frac{4 \times 5! - 5 \times 4!}{4!} =$ _____

*(60) The perimeter of $90x^2 + 150y^2 = 13500$ is _____

(61) $444 \times \frac{5}{37} =$ _____

(62) $306^2 =$ _____

(63) $123_4 \div 3_4 =$ _____$_4$

(64) The slope of the line $3x + 4y - 5 = 0$ is _____

(65) $49^2 + 49 =$ _____

(66) $16^2 - 17^2 + 18^2 - 19^2 =$ _____

(67) $\sin[\sin^{-1}(\frac{1}{2})] =$ _____

(68) $2^3 \times 5^3 \times 7^3 =$ _____

(69) If $\sin\theta = -.1$, then $\csc\theta =$ _____

*(70) $4.8^3 \times 6.3^3 =$ _____

(71) $222 \times \frac{1}{27} =$ _____ (mixed number)

(72) If $g(x) = 3x + 2$, then $g^{-1}(-1) =$ _____

(73) The sum of the first nine terms of the Fibonacci sequence 2, 4, 6, 10, 16, ... is _____

(74) $13 \times \frac{13}{14} - 13 =$ _____

(75) $\frac{1}{3} + \frac{1}{6} + \frac{1}{10} =$ _____

(76) The maximum value of $\cos 3x - 2$ is _____

(77) The horizontal asymptote of $y = \frac{x+1}{x-1}$ is _____

(78) If $f(x) = 2x^2 - 3x + 4$, then $f'(-1) =$ _____

(79) $\int_0^1 \sqrt{x}\, dx =$ _____

*(80) $1250 \div 1666 \times 4444 =$ _____

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(1) $2006 - 6002 =$ _____

(2) $2006 \times 6 =$ _____

(3) $\$20.06 + \$60.02 = \$$ _____

(4) $\frac{2}{3} \div \frac{4}{5} =$ _____

(5) $4 - 6 \times 8 + 10 =$ _____

(6) $\frac{1}{16} =$ _____ % (decimal)

(7) $26^2 =$ _____

(8) $2006 \div 25 =$ _____ (decimal)

(9) $2468 \div 9$ has a remainder of _____

*(10) $88 - 222 + 99 - 333 =$ _____

(11) $2006 - 2006 \times 6 =$ _____

(12) $2 + 4 + 6 + \ldots + 22 =$ _____

(13) $6 \times 6 \times 6 =$ _____

(14) The GCF of 48 and 54 is _____

(15) Which is larger, $\frac{11}{15}$ or $\frac{15}{19}$? = _____

(16) $\frac{5}{(2^3)(5^2)} =$ _____ (decimal)

(17) $26 \times 62 =$ _____

(18) $.2111\ldots =$ _____ (proper fraction)

(19) $2\frac{3}{4} + 6\frac{7}{8} =$ _____ (mixed number)

*(20) $\sqrt{265278} =$ _____

(21) $MMVI \times XI =$ _____ (Arabic Numeral)

(22) $4\frac{4}{5} \div 4 =$ _____

(23) The number of positive integral divisors of $6^5 \times 4^3 \times 2^1$ is _____

(24) 30 minus 40% of 50 is _____

(25) $.125 - .375 - .625 =$ _____ (proper fraction)

(26) $200_6 =$ _____ $_{10}$

(27) $(7^3 + 8^2 - 9^1) \div 6$ has a remainder of ___

(28) $19 \times \frac{19}{23} =$ _____ (mixed number)

(29) 3.5 pints = _____ quarts

*(30) $234678 \div 911 =$ _____

(31) $16 \times 66 - 16 \times 50 =$ _____

(32) The set {T, W, O} has _____ proper subsets

(33) $9 - 7 \times (5 + 3) \div 1 =$ _____

(34) $\sqrt[3]{1728} \div \sqrt{36} =$ _____

(35) The mean of 33, 21, and 27 is _____

(36) If a bag of 30 oranges cost \$4.75, then the cost of 6 oranges is \$ _____

(37) $4^4 + 4^2 + 4^0 =$ _____ base 4

(38) If $x = 6$ and $y = 9$ then $x^2 + 2xy + y^2 =$ ____

(39) $63 \times 143 =$ _____

*(40) $24 \times 34 \times 44 =$ _____

(41) $5! \times 3! =$ _____

(42) A hexahedron has _____ faces

(43) If the area of an equilateral triangle is $9\sqrt{3}$ cm^2 then its side length is _____ cm

(44) $77 \div 1.75 =$ _____

(45) If $x + 4y = 5$ and $x - 3y = 4$, then $y =$ _____

(46) $14 \times 25 + 12.5 \times 28 =$ _____

(47) $21\frac{3}{7}\% =$ _____ (proper fraction)

(48) $102 \times 103 =$ _____

(49) $231_4 =$ _____ 2

*(50) $719 \times 875 =$ _____

(51) $51^2 + 51 \times 49 =$ _____

(52) If $(3 + 4i)^2 = a + bi$, then $a =$ _____

(53) $221 \times 141 =$ _____

(54) $61 \times 69 + 16 =$ _____

(55) $4 + 1 + \frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \ldots =$ _____

(56) $\frac{4 \times 5! + 5 \times 4!}{4!} =$ _____

(57) $433\frac{1}{3}\%$ of 15 is _____

(58) $\text{Sin}\left(\frac{11\pi}{6}\right) =$ _____

(59) The largest integer such that $4x + 3 < 2$ is _____

*(60) The area of $14x^2 + 16y^2 = 224$ is _____

(61) $555 \times \frac{6}{37} =$ _____

(62) If $\text{Log}_4 X = 3$, then $\sqrt{X} =$ _____

(63) $431_5 \div 4_5 =$ _____ 5

(64) $1 - 2\sin^2 30° =$ _____

(65) $2^4 \times 3^3 \times 5^2 =$ _____

(66) $21^2 - 20^2 + 19^2 - 18^2 =$ _____

(67) $208^2 =$ _____

(68) $79^2 + 79 =$ _____

(69) The slope of the line parallel to the line $5x - 4y + 3 = 0$ is _____

*(70) $5.1^3 \times 7.9^3 =$ _____

(71) $444 \times \frac{1}{27} =$ _____ (mixed number)

(72) $\frac{1}{3} + \frac{1}{6} + \frac{1}{10} + \frac{1}{15} =$ _____

(73) The sum of the first nine terms of the Fibonacci sequence 1, 5, 6, 11, 17, ... is _____

(74) $17 \times \frac{17}{18} - 17 =$ _____

(75) A pair of dice is thrown. The probability that the sum is 7 is _____

(76) If $h(x) = 2x - 3$, then $h^{-1}(-1) =$ _____

(77) The minimum value of $\sin 2x - 3$ is _____

(78) If $f(x) = 4 - 3x - 2x^2$ then $f'(-1) =$ ____

(79) $\int_0^1 \sqrt[3]{x}\, dx =$ _____

*(80) $(4e)^3 =$ _____

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(1) $2006 + 6002 =$ _____

(2) $\frac{1}{2} + \frac{3}{4} =$ _____

(3) $1 + 2 \times 3 - 4 \div 5 =$ _____

(4) $600.2 - 200.6 =$ _____ (decimal)

(5) $24^2 =$ _____

(6) $37.5\% =$ _____ (proper fraction)

(7) $2006 \div 6$ has a remainder of _____

(8) $246 \times 11 =$ _____

(9) MMLIX − LIII = _____ (Arabic Numeral)

*(10) $6002 + 602 + 206 - 2006 =$ _____

(11) Which is larger, $\frac{8}{9}$ or $\frac{22}{25}$ = _____

(12) $12 \times 12 \times 12 =$ _____

(13) $3 + 6 + 9 + \ldots + 27 + 30 =$ _____

(14) The multiplicative inverse of -2.6 is _____

(15) $\frac{1}{4} - \frac{1}{8} - \frac{1}{12} =$ _____ (proper fraction)

(16) $33 \times 44 =$ _____

(17) $\frac{3^3}{(2^2)(5^2)} =$ _____ (decimal)

(18) $6\frac{7}{8} - 5\frac{3}{4} =$ _____

(19) The LCM of 54 and 48 is _____

*(20) $774447 \div 111 =$ _____

(21) A rectangle has a length of 2.4 in and a width of 1.5 in. Its area is _____ sq. in.

(22) 2.6 meters = _____ millimeters

(23) $(20 + 4 \times 6^2) \div 8$ has a remainder of _____

(24) .2141414... = _____ (proper fraction)

(25) The sum of the positive integral divisors of 20 is _____

(26) $210_4 =$ _____$_6$

(27) 2.5 pints = _____ cups

(28) $1.25 - .75 - .25 =$ _____ (proper fraction)

(29) $29 \times \frac{29}{34} =$ _____ (mixed number)

*(30) $52 \times 48 + 49 \times 51 =$ _____

(31) What number divided by 5 and subtracted from 24, gives the same results? _____

(32) $143 \times 77 =$ _____

(33) If $x = 1$ and $y = 2$ then $(x - y)(x^2 + xy + y^2) =$ _____

(34) $(81)^{\frac{1}{2}} \div (729)^{\frac{1}{3}} =$ _____

(35) $3^3 + 3^2 + 3^0 =$ _____ base 3

(36) If 4 notepads cost 18 cents then 18 notepads cost $ _____

(37) 12% of 200 is _____ % of 50.

(38) $96 \times 103 =$ _____

(39) Set A has 32 subsets. How many elements are in set A? _____

*(40) $\sqrt{81818} =$ _____

(41) $35\frac{5}{7}\ \% =$ _____ (proper fraction)

(42) The perimeter of a square whose diagonal is $2\sqrt{2}$ inches is _____ inches

(43) $4! - 6! =$ _____

(44) If $4x - 3 = 3x + 2$ then $2x - 1 =$ _____

(45) An octahedron has _____ vertices

(46) $27 \times 33 - 11 \times 81 =$ _____

(47) $33 \div 3.75 =$ _____ (decimal)

(48) $432_8 =$ _____ 2

(49) If the hypotenuse of a 30° - 60° right triangle is 15 cm, then the leg opposite the 30° angle is _____ cm

*(50) $15^3 \times 5^3 =$ _____

(51) 33% of $466\frac{2}{3}$ is _____

(52) $72 \times 78 + 9 =$ _____

(53) $\frac{3}{8} - \frac{26}{73} =$ _____

(54) $3 - 1 - \frac{1}{3} - \frac{1}{9} - \frac{1}{27} - \ldots =$ _____

(55) The smallest integer such that $4x + 3 > -2$ is _____

(56) $\cos(-5\pi) =$ _____

(57) $\frac{6 \times 7! - 7 \times 6!}{6!} =$ _____

(58) $38^2 + (30 + 8)(30 - 8) =$ _____

(59) $131 \times 212 =$ _____

*(60) The surface area of a regular octahedron whose edges are 20 cm is _____ cm^2

(61) $402^2 =$ _____

(62) $888 \times \frac{4}{37} =$ _____

(63) $59^2 + 59 =$ _____

(64) $24^2 - 22^2 + 20^2 - 18^2 =$ _____

(65) $222_3 \times 2_3 =$ _____ 3

(66) The slope of the line perpendicular to the line $5x - 4y = 3$ is _____

(67) If $\text{Log}_5 X^2 = 4$, then $\sqrt{X} =$ _____

(68) If $\cos\theta = 0.08333...$, then $\sec\theta =$ _____

(69) $2^5 \times 3^4 \times 5^3 =$ _____

*(70) $4.9^3 \times 3.3^3 =$ _____

(71) $666 \times \frac{1}{27} =$ _____ (mixed number)

(72) If $f(x) = 2(x + 3)$, then $f^{-1}(-4) =$ _____

(73) $\frac{1}{6} + \frac{1}{10} + \frac{1}{15} + \frac{1}{21} =$ _____

(74) $14 \times \frac{14}{17} - 14 =$ _____ (mixed number)

(75) The sum of the first nine terms of the Fibonacci sequence 3, 5, 8, 13, 21, ... is _____

(76) If $g(x) = x^3 - 3x - 3$, then $g'(-3) =$ _____

(77) The graph $y = \frac{x^2 + x - 6}{3x + 12}$ has a vertical asymptote at $x =$ _____

(78) A pair of dice is thrown. The odds that the sum is 7 is _____

(79) $\int_{-1}^{2} 3x^2\ dx =$ _____

*(80) 300 log 600 = _____

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(1) $2600 - 206 =$ _____

(2) $3232 \times 25 =$ _____

(3) $\frac{3}{8} \div \frac{4}{9} =$ _____

(4) $2.006 + 200.6 =$ _____ (decimal)

(5) $1234 \div 9 =$ _____ (mixed number)

(6) $\frac{11}{40} =$ _____ % (decimal)

(7) $6 \div 2 \times 4 + 8 - 10 =$ _____

(8) $16^2 =$ _____

(9) Which is smaller, $\frac{8}{11}$ or $\frac{7}{9}$ = _____

*(10) $2626 - 262 + 62 =$ _____

(11) 64 is 16% of _____

(12) $7653 \div 11$ has a remainder of _____

(13) $6\frac{7}{8} + 3\frac{15}{16} =$ _____ (mixed number)

(14) $\frac{3^4}{(2^3)(5^3)} =$ _____ (decimal)

(15) $12^3 =$ _____

(16) $44 \times 55 =$ _____

(17) MCXI — DLV = _____ (Arabic Numeral)

(18) $2 + 6 + 10 + ... + 42 =$ _____

(19) $\frac{1}{3} - \frac{1}{9} - \frac{1}{18} =$ _____ (proper fraction)

*(20) $246 \times 975 \div 318 =$ _____

(21) The number of positive integral divisors of $5^3 \times 3^2 \times 2^1$ is _____

(22) 3.2 kilograms = _____ decigrams

(23) $123_8 =$ _____ $_{10}$

(24) $11\frac{10}{11} \times 11 =$ _____

(25) $(72 \times 64 - 83) \div 7$ has a remainder of ____

(26) $57^2 - 58^2 =$ _____

(27) .363636... = _____ (proper fraction)

(28) A right triangle has integer side lengths of 7, x, and 25 units. Its area is _____ sq.units

(29) 14 more than 14% of 1400 is _____

*(30) $14^4 =$ _____

(31) If $x = -3$ and $y = -2$ then $x^2 - 2xy + y^2 =$ _____

(32) Set P has 63 proper subsets. How many elements are in set P? _____

(33) The 6th pentagonal number is _____

(34) $112 \times 211 =$ _____

(35) $216 + 108 + 30 + 5 =$ _____$_6$

(36) $\frac{17}{14} =$ _____ % (mixed number)

(37) A CD costs \$12.50. 15 CDs cost \$ _____

(38) $5621 \div 77 =$ _____

(39) The mean of 3.4, 4.5, and 2.3 is _____

*(40) $80 \times 82 \times 84 =$ _____

(41) $6! \div 4! =$ _____

(42) If $3x + 5 = 2x - 4$ then $x =$ _____

(43) $40 \times 12 + 20 \times 24 =$ _____

(44) A septagon has _____ sides

(45) The sum of the roots of $(2x - 3)^2 = 0$ is ____

(46) $64\frac{2}{7}\% =$ _____ (proper fraction)

(47) $\frac{7}{13} + \frac{6}{7} =$ _____ (mixed number)

(48) The slope of the line $5 - 3x = 7y$ is _____

(49) The vertex of $y = x^2 - 2x - 4$ is (h,k) and $k =$ _____

*(50) $\sqrt[3]{26789} \times \sqrt{911} \times 31 =$ _____

(51) The smallest integer such that $5 - 3x < -2$ is _____

(52) $37^2 + 30^2 - 7^2 =$ _____

(53) $\frac{10 \times 9! - 10! \times 9}{9!} =$ _____

(54) When two dice are tossed, the probability that the sum of the faces will be 7 is _____

(55) If $44_b = 40$, then $b =$ _____

(56) $\sin 5\pi + \cos 5\pi =$ _____

(57) $81 \times 89 + 16 =$ _____

(58) If $\log_4 (x) = -.5$, then $x =$ _____

(59) The line containing the points (4,7) and (3,6) has a y-intercept of (x,y). $y =$ _____

*(60) $884422 \div 666 =$ _____

(61) $41^2 - 42^2 + 43^2 - 44^2 =$ _____

(62) $(31_5 - 12_5) \times 11_5 =$ _____$_5$

(63) $99 \times 99 + 99 =$ _____

(64) $\sin [\cos^{-1}(\frac{\sqrt{3}}{2})] =$ _____

(65) $777 \times \frac{7}{37} =$ _____

(66) If $3\text{Log}_3 X = 6$, then $\sqrt{X} =$ _____

(67) $804^2 =$ _____

(68) $2^3 \times 3^4 \times 5^5 =$ _____

(69) $\frac{1}{15} + \frac{1}{21} + \frac{1}{28} =$ _____ (proper fraction)

*(70) The perimeter of the ellipse $145x^2 + 168y^2 = 24360$ is _____

(71) The sum of the first nine terms of the Fibonacci sequence — 3, 4, 1, 5, 6, ... is ____

(72) $444 \times \frac{2}{27} =$ _____ (mixed number)

(73) $13 \times \frac{13}{16} - 13 =$ _____

(74) If $f(x) = 2 - 3x$, then $f^{-1}(4) =$ _____

(75) The minimum value of $\sin 3x - 5$ is _____

(76) If $g(x) = 2x^3 + 3x^2 + 5$, then $g''(4) =$ _____

(77) $\int_2^4 \frac{3x}{5}\, dx =$ _____

(78) A vertical asymptote of $y = \frac{x^2 + 1}{x + 1}$ is ____

(79) $2^3 + 3^3 + 4^3 - 5^3 =$ _____

*(80) $375 \div 833 \times 555 =$ _____

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(1) $602 - 2006 =$ _____

(2) $20.06 + 600.2 =$ _____ (decimal)

(3) $1616 \div 25 =$ _____ (decimal)

(4) $\frac{3}{8} \times \frac{4}{9} =$ _____

(5) $1 + 9 \div 3 - 7 \times 5 =$ _____

(6) $27.5\% =$ _____ (proper fraction)

(7) Which is larger, $\frac{7}{25}$ or .25 = _____

(8) $34^2 =$ _____

(9) $357 \times 11 =$ _____

*(10) $75 + 236 - 4198 =$ _____

(11) $38 \times 74 =$ _____

(12) $13^3 =$ _____

(13) $3 + 8 + 13 + ... + 43 =$ _____

(14) The multiplicative inverse of -6.2 is _____

(15) CMIX − CDIV = _____ (Arabic Numeral)

(16) $\frac{1}{36} - \frac{1}{18} - \frac{1}{6} =$ _____ (proper fraction)

(17) .3222... = _____ (proper fraction)

(18) 24% of 80 = _____ % of 240

(19) $48 \times 22 - 22 \times 78 =$ _____

*(20) $\sqrt{262626} =$ _____

(21) The number of positive integral divisors of $6^1 \times 3^2 \times 2^3$ is _____

(22) 50 minus 60% of 70 is _____

(23) A square has an area of 12.25 sq. cm. Its perimeter is _____ cm.

(24) 123 base 10 equals _____ base 5

(25) $4\frac{4}{5} \div .444... =$ _____ (decimal)

(26) $(15 \times 30 - 45) \div 7$ has a remainder of ____

(27) 37.5% of a gallon is _____ pints

(28) $55^2 - 52^2 =$ _____

(29) The sum of 5 and 2x equals the product of 5 and 2x. Find x. _____

*(30) $248 \times 250 \times 252 =$ _____

(31) Set A = {m,e,n,t,a,l} and set B = {m,a,t,h}. $A \cap B$ contains how many elements? _____

(32) If $f(x) = 4x^2 - 12x + 9$ then $f(9) =$ _____

(33) $97 \times 89 =$ _____

(34) The 5th hexagonal number is _____

(35) If $\frac{x-1}{3} + \frac{x-2}{4} = \frac{x-4}{12}$ then $x =$ _____

(36) $\sqrt{98 \times 8} =$ _____

(37) $\frac{13}{14} =$ _____ % (mixed number)

(38) GCD(18,33) + LCM(18,33) = _____

(39) $3904 \div 61 =$ _____

*(40) $48 \times 106 + 52 \times 114 =$ _____

(41) $78\frac{4}{7}\% =$ _____ (proper fraction)

(42) $312_4 =$ _____ $_2$

(43) In a 30° - 60° - 90° triangle the length of the leg opposite of the 30° angle is 7 cm. The length of the hypotenuse is _____ cm

(44) $63 \div .875 =$ _____

(45) The 11th term of the arithmetic sequence 12, 9.5, 7, 4.5, ... is _____

(46) If $5^x = 125$ then $x^5 =$ _____

(47) The modulus of $14 + 48i$ is _____

(48) $2! \times 3! - 5! =$ _____

(49) $369 \times 101 =$ _____

*(50) $566472 \div 748 =$ _____

(51) If $(2 - 5i)^2 = a + bi$, then $a + b =$ _____

(52) $466\frac{2}{3}\%$ of 60 is _____

(53) $\cos(-3\pi) - \sin(-3\pi) =$ _____

(54) $53 \times 53 + 50 \times 50 - 3 \times 3 =$ _____

(55) If 852k is divisible by 6 then the largest units digit value for k is _____

(56) $47 \times 43 + 4 =$ _____

(57) ${}_8C_6 =$ _____

(58) An equilateral triangle has an area of $27\sqrt{3}$ sq. cm. Its height is _____ cm.

(59) $124 \times 312 =$ _____

*(60) $\sqrt[3]{215346} \times \sqrt{3690} \times 57 =$ _____

(61) If $\text{Log}_2 X = 9$, then $\sqrt[3]{X} =$ _____

(62) $(33_4 + 22_4) \times 11_4 =$ _____ $_4$

(63) $909 \times 909 =$ _____

(64) The slope of the line perpendicular to the line $3x + 4y = 5$ is _____

(65) $999 \times \frac{3}{37} =$ _____

(66) $69^2 + 69 =$ _____

(67) The period of $y = 2 + 3\sin(\frac{x}{5})$ is _____°

(68) $56^2 - 55^2 + 54^2 - 53^2 =$ _____

(69) $\frac{1}{21} + \frac{1}{28} + \frac{1}{36} =$ _____

*(70) The area of the ellipse $141x^2 + 171y^2 = 24111$ is _____

(71) The sum of the first nine terms of the Fibonacci sequence 1, 1, 2, 3, 5,... is _____

(72) $666 \times \frac{3}{27} =$ _____

(73) $15 \times \frac{15}{17} - 15 =$ _____

(74) A pair of dice is thrown. The odds that the sum is 6 or 8 is _____

(75) If $h(x) = 1 + 2x^2 - 3x^3$, then $h''(4) =$ _____

(76) The maximum value of $5 - \cos 3x$ is _____

(77) $y = \frac{1}{x+1} - 3$ has a horizontal asymptote at $y =$ _____

(78) $\int_1^2 x^3 \, dx =$ _____

(79) $(3^3 - 2^3 + 1^3) \times 5^3 =$ _____

*(80) $62.5 \div 83.3 \times 888 =$ _____

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Contestant's Number _____

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STOP -- WAIT FOR SIGNAL!

(1) $2060 + 6020 =$ _____

(2) $2006 \times 11 =$ _____

(3) $\frac{1}{2} - \frac{3}{4} =$ _____ (decimal)

(4) $2006 \div 8 =$ _____ (mixed number)

(5) $(1 - 3 \times 4) \div 11 + 7 =$ _____

(6) $26\% =$ _____ (proper fraction)

(7) $18^2 =$ _____

(8) $12^3 =$ _____

(9) Which is smaller, $\frac{6}{25}$ or .25 = _____

*(10) $2006 - 602 + 206 =$ _____

(11) $23 \times 32 =$ _____

(12) $4 + 8 + 12 + \ldots + 44 =$ _____

(13) $10\frac{11}{12} - 5\frac{23}{24} =$ _____ (mixed number)

(14) MDXLV ÷ XV = _____ (Arabic Numeral)

(15) $\frac{1}{15} - \frac{1}{10} - \frac{1}{5} =$ _____

(16) $\frac{3^4}{(2^4)(5^4)} =$ _____ (decimal)

(17) The LCM of 108 and 81 is _____

(18) 44% of _____ = 88% of 22

(19) 745321 ÷ 11 has a remainder of _____

*(20) $\sqrt{2006 \times 6002} =$ _____

(21) The number of positive integral divisors of $12 \times 3^3 \times 2^4$ is _____

(22) 2.5 decameters = _____ kilometers

(23) $(6^4 \times 5^3 - 4^2) \div 3$ has a remainder of ____

(24) 50 — 60% of 70 is _____

(25) .0625 + .125 + .25 = _____ (proper fraction)

(26) $48^2 - 49^2 =$ _____

(27) 62.5% of a gallon is _____ quarts

(28) $123_4 =$ _____$_5$

(29) $17 \times 1\frac{17}{21} =$ _____ (mixed number)

*(30) $918576 \div 432 =$ _____

(31) If $x = -5$ and $y = -6$ then $x^3 + 3x^2y + 3xy^2 + y^3 =$ _____

(32) $94 \times 91 =$ _____

(33) Set A has 15 proper subsets. How many elements are in Set A? _____

(34) $11 \times 13 \times 42 =$ _____

(35) $8^2 + 2^4 + 4^0 =$ _____ base 4

(36) If 15 apples cost \$6.25, then 27 cost \$ _____

(37) $\sqrt{225} \div \sqrt[3]{3375} =$ _____

(38) GCF(24,44) — LCM(24,44) = _____

(39) $6.8 \times 7.2 =$ _____ (decimal)

*(40) $43 \times 56 + 47 \times 54 =$ _____

(41) $5! \div 3! \times 2! =$ _____

(42) If $6x - 5 = 4 + 3x$, then $2x - 1 =$ _____

(43) In a 30°-60°-90° triangle the hypotenuse is 9 cm. The smallest leg is _____ cm

(44) An icosahedron is a Platonic solid with 30 edges and _____ vertices

(45) $42\frac{6}{7}\% =$ _____ (proper fraction)

(46) $15 \times 75 + 45 \times 25 =$ _____

(47) $\frac{11}{15} + \frac{4}{11} =$ _____ (mixed number)

(48) If $x^3 = 64$ then $3^x =$ _____

(49) $24 \div .375 =$ _____

*(50) $13^3 \times 3^4 =$ _____

(51) $\frac{8! \times 7 - 8 \times 7!}{7!} =$ _____

(52) $\frac{8}{11} - \frac{87}{122} =$ _____

(53) $\cos\left(-\frac{4\pi}{3}\right) + \sin\left(-\frac{5\pi}{6}\right) =$ _____

(54) $81^2 + (80 + 1)(80 - 1) =$ _____

(55) $5 + 1 + \frac{1}{5} + \frac{1}{25} + \frac{1}{125} + \ldots =$ _____

(56) Two dice are tossed. What is the probability the sum is a multiple of 4? _____

(57) $141 \times 212 =$ _____

(58) If 555k is divisible by 6 then the smallest units digit value for k is _____

(59) $36 \times 34 + 1 =$ _____

*(60) $\sqrt[4]{4095} \times \sqrt[3]{510} \times \sqrt{66} =$ _____

(61) $888 \times \frac{24}{37} =$ _____

(62) $235_6 \div 5_6 =$ _____ 6

(63) $505 \times 505 =$ _____

(64) The slope of the line containing points $(2, -3)$ and $(-3, 2)$ is _____

(65) $2^4 \times 7^2 \times 5^3 =$ _____

(66) $109^2 + 109 =$ _____

(67) $999 \times \frac{1}{27} =$ _____

(68) $74^2 - 76^2 + 78^2 - 80^2 =$ _____

(69) If $\log_x 64 = 3$ then $x^{-2} =$ _____

*(70) The perimeter of the ellipse $143x^2 + 170y^2 = 24310$ is _____

(71) $\frac{1}{15} + \frac{1}{21} + \frac{1}{28} + \frac{1}{36} =$ _____

(72) If $h(x) = 5x - 3$, then $h^{-1}(2) =$ _____

(73) $13 \times \frac{13}{15} - 13 =$ _____ (mixed number)

(74) The sum of the first nine terms of the Fibonacci sequence — 3,2, — 1,1,0, ... is _____

(75) If $f(x) = 4 - 3x^2 + 2x^3$, then $f''(5) =$ _____

(76) The graph $y = \frac{2x^2 - 11}{x^2 + 9}$ has a horizontal asymptote at $y =$ _____

(77) $\int_0^2 x^3\,dx =$ _____

(78) If $\csc\theta = -3$, where $270° < \theta < 300°$, then $\sin\theta =$ _____

(79) $2^3 + 3^3 + 5^3 =$ _____

*(80) $(e)^4(\pi)^4 =$ _____

The University Interscholastic League
Number Sense Test ⊛ HS State ⊛ 2006

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STOP -- WAIT FOR SIGNAL!

(1) $6060 - 2020 =$ _____

(2) $2.6 \times 2.5 =$ _____ (decimal)

(3) $\frac{2}{3} + \frac{5}{8} =$ _____ (mixed number)

(4) $22066 \div 11 =$ _____

(5) $17^2 =$ _____

(6) $(1 + 1 \times 2) \div 3 - 5 =$ _____

(7) Which is larger, $\frac{7}{22}$ or .33 = _____

(8) $13^3 =$ _____

(9) $1\frac{1}{10}\% =$ _____ (proper fraction)

*(10) $2006 - 200.6 + 20.06 - 2.006 =$ _____

(11) $8\frac{9}{10} + 4\frac{17}{20} =$ _____ (mixed number)

(12) The GCF of 132 and 187 is _____

(13) $\frac{1}{7} + \frac{1}{14} + \frac{1}{28} =$ _____

(14) $142536 \div 11$ has a remainder of _____

(15) $53 \times 42 =$ _____

(16) $CDIV \div XL =$ _____ (Arabic Numeral)

(17) $6 + 12 + 18 + ... + 66 =$ _____

(18) 80% of $90 - 100 =$ _____

(19) $33 - 66 + 99 - 99 - 66 + 33 =$ _____

*(20) $\sqrt[3]{2006 \times 6002} =$ _____

(21) $69^2 - 67^2 =$ _____

(22) 3.21 liters = _____ mililiters

(23) $35 \times 1\frac{35}{38} =$ _____ (mixed number)

(24) 45% of 45 — 45 is _____

(25) $.25 + .125 - \frac{1}{12} =$ _____ (proper fraction)

(26) The number of positive integral divisors of $50 \times 5^4 \times 2^3$ is _____

(27) Set A has 8 distinct elements. How many proper subsets with at least one element does set A have? _____

(28) $93 \times 104 =$ _____

(29) $(2^4 \times 3^6 + 5^{10}) \div 4$ has a remainder of _____

*(30) $73 \times 86 + 77 \times 84 =$ _____

(31) 87.5% of a gallon is _____ fl. oz.

(32) 234_5 = _____ 4

(33) If x = 5 and y = − 7 then $x^3 - 3x^2y + 3xy^2 - y^3$ = _____

(34) If 44 pens cost $77.00, then 12 cost $ _____

(35) 686 + 98 + 14 = _____ base 7

(36) 7.6 × 8.4 = _____ (decimal)

(37) LCM(21,84) − GCF(21,84) = _____

(38) $\sqrt{676} \div \sqrt[3]{-2197}$ = _____

(39) 143 × 13 × 7 = _____

*(40) 875421 ÷ 369 = _____

(41) .875 ÷ 35 = _____

(42) If $x^5 = -32$ then 5^x = _____

(43) $1\frac{12}{13} + 1\frac{1}{12}$ = _____ (mixed number)

(44) A dodecahedron is a Platonic solid with 30 edges and _____ vertices

(45) If 6x − 5(4 − 3x) = 1, then 2 − x = _____

(46) 22 × 75 + 110 × 15 = _____

(47) In a 45°-45°-90° triangle the hypotenuse is $2\sqrt{2}$ ft. The area of the triangle is ____ sq. ft

(48) $92\frac{6}{7}\%$ = _____ (proper fraction)

(49) $\frac{4}{5} - \frac{67}{86}$ = _____

*(50) $\sqrt[4]{14643} \times \sqrt[3]{1329} \times \sqrt{120}$ = _____

(51) If 86k6 is divisible by 6 then the largest tens digit value for k is _____

(52) $\frac{11 \times 10! - 11! \times 10}{11!}$ = _____

(53) $55^2 - 50^2 + 5^2$ = _____

(54) $\sin\left(-\frac{7\pi}{6}\right) - \cos\left(-\frac{2\pi}{3}\right)$ = _____

(55) Two dice are tossed. What is the probability the sum is a multiple of 5? _____

(56) 77 × 73 + 4 = _____

(57) $6 - 1 - \frac{1}{6} - \frac{1}{36} - \frac{1}{216} - \ldots$ = _____

(58) 114 × 221 = _____

(59) 6! ÷ (3! × 2!) = _____

*(60) $14^3 \times 4^5$ = _____

(61) $4^2 \times 5^2 \times 6^2$ = _____

(62) $666 \times \frac{18}{37}$ = _____

(63) The slope of the line containing points (− 2 , 2) and (− 3 , 3) is _____

(64) 602 × 602 = _____

(65) 129 × 129 + 129 = _____

(66) $543_7 \div 6_7$ = _____ 7

(67) $89^2 - 86^2 + 83^2 - 80^2$ = _____

(68) $999 \times \frac{5}{27}$ = _____

(69) If h(x) = 5 − 3x, then $h^{-1}(-2)$ = _____

*(70) The area of $90x^2 + 150y^2 = 13500$ is _____

(71) If $\log_9 X = 2$ then $\sqrt{X}$ = _____

(72) $\frac{1}{3} + \frac{1}{6} + \frac{1}{10} + \frac{1}{15} + \ldots + \frac{1}{36}$ = _____

(73) The sum of the first nine terms of the Fibonacci sequence 1, 3, 4, 7, 11, ... is _____

(74) $22 \times \frac{22}{25} - 22$ = _____ (mixed number)

(75) If $f(x) = (3x^2 - 4)^2$, then $f'(1)$ = _____

(76) If sec θ = − 3 in QIII, then cos θ = _____

(77) $\int_0^2 x^3 + 1\, dx$ = _____

(78) The maximum value of 2cos 3x − 5 is ____

(79) $2^3 - 3^3 - 5^3$ = _____

*(80) $[(\pi)(e)]^4$ = _____

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*number) x – y means an integer between x and y inclusive

NOTE: If an answer is of the type like $\frac{2}{3}$ it cannot be written as a repeating decimal

(1) 7007

(2) 401

(3) $ 29.97

(4) 1

(5) 10

(6) $\frac{1}{8}$

(7) .0625

(8) 625

(9) 8020

*(10) 1357 – 1499

(11) 1008

(12) $-4\frac{1}{2}$

(13) $\frac{7}{11}$

(14) $\frac{1}{4}$

(15) 343

(16) 100

(17) .075

(18) $13\frac{9}{19}$

(19) 40

*(20) 97765 – 108055

(21) 41

(22) $\frac{41}{99}$

(23) 7

(24) 9

(25) $\frac{1}{8}$

(26) 2

(27) 50

(28) 32

(29) $\frac{4}{3}$ or $1\frac{1}{3}$

*(30) 444 – 489

(31) 144

(32) 25.2, $25\frac{1}{5}$, $\frac{126}{5}$

(33) 31

(34) 8

(35) 7007

(36) 108

(37) $ 69.00

(38) 1

(39) 24.91

*(40) 151 – 166

(41) 8556

(42) 660

(43) 3

(44) $\frac{1}{14}$

(45) 506

(46) 42

(47) $\frac{18}{5}$ or $3\frac{3}{5}$ or 3.6

(48) 6

(49) 88

*(50) 60800 – 67200

(51) 3760

(52) 4

(53) 1

(54) 52

(55) 49731

(56) 3025

(57) 4

(58) $\frac{1}{18}$

(59) 15

*(60) 66 – 72

(61) 60

(62) 93636

(63) 21

(64) $-\frac{3}{4}$ or –.75

(65) 2450

(66) – 70

(67) $\frac{1}{2}$ or .5

(68) 343000

(69) – 10

*(70) 26271 – 29035

(71) $8\frac{2}{9}$

(72) – 1

(73) 284

(74) $-\frac{13}{14}$

(75) $\frac{3}{5}$

(76) – 1

(77) 1

(78) – 7

(79) $\frac{2}{3}$

*(80) 3168 – 3501

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*number) x — y means an integer between x and y inclusive

NOTE: If an answer is of the type like $\frac{2}{3}$ it cannot be written as a repeating decimal

(1) — 3996

(2) 12036

(3) 80.08

(4) $\frac{5}{6}$

(5) — 34

(6) 6.25

(7) 676

(8) 80.24

(9) 2

*(10) (— 386) • (— 349)

(11) — 10030

(12) 132

(13) 216

(14) 6

(15) $\frac{15}{19}$

(16) .025

(17) 1612

(18) $\frac{19}{90}$

(19) $9\frac{5}{8}$

*(20) 490 — 540

(21) 22066

(22) $\frac{6}{5}, 1\frac{1}{5}, 1.2$

(23) 78

(24) 10

(25) $-\frac{7}{8}$

(26) 72

(27) 2

(28) $15\frac{16}{23}$

(29) $1.75, 1\frac{3}{4}, \frac{7}{4}$

*(30) 245 — 270

(31) 256

(32) 7

(33) — 47

(34) 2

(35) 27

(36) $ .95

(37) 10101

(38) 225

(39) 9009

*(40) 34109 — 37699

(41) 720

(42) 6

(43) 6

(44) 44

(45) $\frac{1}{7}$

(46) 700

(47) $\frac{3}{14}$

(48) 10506

(49) 101101

*(50) 597669 — 660581

(51) 5100

(52) — 7

(53) 31161

(54) 4225

(55) $5\frac{1}{3}, \frac{16}{3}$

(56) 25

(57) 65

(58) $-\frac{1}{2}, -.5$

(59) — 1

*(60) 45 — 49

(61) 90

(62) 8

(63) 104

(64) $\frac{1}{2}, .5$

(65) 10800

(66) 78

(67) 43264

(68) 6320

(69) $\frac{5}{4}, 1\frac{1}{4}, 1.25$

*(70) 62133 — 68672

(71) $16\frac{4}{9}$

(72) $\frac{2}{3}$

(73) 304

(74) $-\frac{17}{18}$

(75) $\frac{1}{6}$

(76) 1

(77) — 4

(78) 1

(79) $\frac{3}{4}, .75$

*(80) 1222 — 1349

University Interscholastic League - Number Sense Answer Key HS • Invitation B • 2006

*number) x – y means an integer between x and y inclusive

NOTE: If an answer is of the type like $\frac{2}{3}$ it cannot be written as a repeating decimal

(1) 8008

(2) $\frac{5}{4}$, $1\frac{1}{4}$, 1.25

(3) $\frac{31}{5}$, $6\frac{1}{5}$, 6.2

(4) 399.6

(5) 576

(6) $\frac{3}{8}$

(7) 2

(8) 2706

(9) 2006

*(10) 4564 – 5044

(11) $\frac{8}{9}$

(12) 1728

(13) 165

(14) $-\frac{5}{13}$

(15) $\frac{1}{24}$

(16) 1452

(17) .27

(18) $\frac{9}{8}$, $1\frac{1}{8}$, 1.125

(19) 432

*(20) 6629 – 7325

(21) $\frac{18}{5}$, $3\frac{3}{5}$, 3.6

(22) 2600

(23) 4

(24) $\frac{106}{495}$

(25) 42

(26) 100

(27) 5

(28) $\frac{1}{4}$

(29) $24\frac{25}{34}$

*(30) 4746 – 5244

(31) 20

(32) 11011

(33) – 7

(34) 1

(35) 1101

(36) $ .81

(37) 48

(38) 9888

(39) 5

*(40) 272 – 300

(41) $\frac{5}{14}$

(42) 8

(43) – 696

(44) 9

(45) 6

(46) 0

(47) 8.8

(48) 100011010

(49) $\frac{15}{2}$, $7\frac{1}{2}$, 7.5

*(50) 400782 – 442968

(51) 154

(52) 5625

(53) $\frac{11}{584}$

(54) $\frac{3}{2}$, $1\frac{1}{2}$, 1.5

(55) – 1

(56) – 1

(57) 35

(58) 2280

(59) 27772

*(60) 1317 – 1454

(61) 161604

(62) 96

(63) 3540

(64) 168

(65) 1221

(66) $-\frac{4}{5}$, – .8

(67) 5

(68) 12

(69) 324000

*(70) 4017 – 4439

(71) $24\frac{2}{3}$

(72) – 5

(73) $\frac{8}{21}$

(74) $-2\frac{8}{17}$

(75) 372

(76) 24

(77) – 4

(78) $\frac{1}{5}$, .2

(79) 9

*(80) 792 – 875

University Interscholastic League - Number Sense Answer Key HS • District 1 • 2006

*number) x – y means an integer between x and y inclusive

NOTE: If an answer is of the type like $\frac{2}{3}$ it cannot be written as a repeating decimal

(1) 2394

(2) 80800

(3) $\frac{27}{32}$

(4) 202.606

(5) $137\frac{1}{9}$

(6) 27.5

(7) 10

(8) 256

(9) $\frac{8}{11}$

*(10) 2305 – 2547

(11) 400

(12) 8

(13) $10\frac{13}{16}$

(14) .081

(15) 1728

(16) 2420

(17) 556

(18) 242

(19) $\frac{1}{6}$

*(20) 717 – 791

(21) 24

(22) 32000

(23) 83

(24) 131

(25) 3

(26) – 115

(27) $\frac{4}{11}$

(28) 84

(29) 210

*(30) 36496 – 40336

(31) 1

(32) 6

(33) 51

(34) 23632

(35) 1355

(36) $121\frac{3}{7}$

(37) $ 187.50

(38) 73

(39) $3.4, 3\frac{2}{5}, \frac{17}{5}$

*(40) 523488 – 578592

(41) 30

(42) – 9

(43) 960

(44) 7

(45) 3

(46) $\frac{9}{14}$

(47) $1\frac{36}{91}$

(48) $-\frac{3}{7}$

(49) – 5

*(50) 26597 – 29396

(51) 3

(52) 2220

(53) – 80

(54) $\frac{1}{6}$

(55) 9

(56) – 1

(57) 7225

(58) .5 or $\frac{1}{2}$

(59) 3

*(60) 1262 – 1394

(61) – 170

(62) 204

(63) 9900

(64) .5 or $\frac{1}{2}$

(65) 147

(66) 3

(67) 646416

(68) 2025000

(69) $\frac{3}{20}$

*(70) 75 – 82

(71) 114

(72) $32\frac{8}{9}$

(73) $-2\frac{7}{16}, -\frac{39}{16}$

(74) $-\frac{2}{3}$

(75) – 6

(76) 54

(77) $3.6, 3\frac{3}{5}, \frac{18}{5}$

(78) – 1

(79) – 26

*(80) 238 – 262

University Interscholastic League - Number Sense Answer Key HS • District 2 • 2006

*number) x — y means an integer between x and y inclusive

NOTE: If an answer is of the type like $\frac{2}{3}$ it cannot be written as a repeating decimal

(1) — 1404

(2) 620.26

(3) 64.64

(4) $\frac{1}{6}$

(5) — 31

(6) $\frac{11}{40}$

(7) .28 or $\frac{7}{25}$

(8) 1156

(9) 3927

*(10) (— 4081) — (— 3693)

(11) 2812

(12) 2197

(13) 207

(14) $-\frac{5}{31}$

(15) 505

(16) $-\frac{7}{36}$

(17) $\frac{29}{90}$

(18) 8

(19) — 660

*(20) 487 — 538

(21) 20

(22) 8

(23) 14

(24) 443

(25) 10.8

(26) 6

(27) 3

(28) 321

(29) .625 or $\frac{5}{8}$

*(30) 14,842,800 — 16,405,200

(31) 3

(32) 225

(33) 8633

(34) 45

(35) 1

(36) 28

(37) $92\frac{6}{7}$

(38) 201

(39) 64

*(40) 10466 — 11566

(41) $\frac{11}{14}$

(42) 110110

(43) 14

(44) 72

(45) — 13

(46) 243

(47) 50

(48) — 108

(49) 37269

*(50) 720 — 795

(51) — 41

(52) 280

(53) — 1

(54) 5300

(55) 6

(56) 2025

(57) 28

(58) 9

(59) 38688

*(60) 197163 – 217916

(61) 8

(62) 1331

(63) 826281

(64) $1\frac{1}{3}$ or $\frac{4}{3}$

(65) 81

(66) 4830

(67) 1800

(68) 218

(69) $\frac{1}{9}$

*(70) 464 — 512

(71) 88

(72) 74

(73) $-1\frac{13}{17}$, $-\frac{30}{17}$

(74) $\frac{5}{13}$

(75) — 68

(76) 6

(77) — 3

(78) 3.75, $3\frac{3}{4}$, $\frac{15}{4}$

(79) 2500

*(80) 633 — 699

University Interscholastic League - Number Sense Answer Key HS • Regional • 2006

*number) x — y means an integer between x and y inclusive

NOTE: If an answer is of the type like $\frac{2}{3}$ it cannot be written as a repeating decimal

(1) 8080

(2) 22066

(3) — .25

(4) $250\frac{3}{4}$

(5) 6

(6) $\frac{13}{50}$

(7) 324

(8) 1728

(9) .24 or $\frac{6}{25}$

*(10) 1530 — 1690

(11) 736

(12) 264

(13) $4\frac{23}{24}$

(14) 103

(15) $-\frac{7}{30}$

(16) .0081

(17) 324

(18) 44

(19) 5

*(20) 3297 — 3643

(21) 35

(22) .025 or $\frac{1}{40}$

(23) 2

(24) 8

(25) $\frac{7}{16}$

(26) — 97

(27) 2.5, $2\frac{1}{2}$, $\frac{5}{2}$

(28) 102

(29) $30\frac{16}{21}$

*(30) 2021 — 2232

(31) — 1331

(32) 8554

(33) 4

(34) 6006

(35) 1101

(36) $ 11.25

(37) 1

(38) — 260

(39) 48.96

*(40) 4699 — 5193

(41) 40

(42) 5

(43) 4.5, $4\frac{1}{2}$, $\frac{9}{2}$

(44) 12

(45) $\frac{3}{7}$

(46) 2250

(47) $1\frac{16}{165}$

(48) 81

(49) 64

*(50) 169060 - 186854

(51) 48

(52) $\frac{19}{1342}$

(53) — 1

(54) 12960

(55) 6.25, $6\frac{1}{4}$, $\frac{25}{4}$

(56) .25 or $\frac{1}{4}$

(57) 29892

(58) 0

(59) 1225

*(60) 494 — 545

(61) 576

(62) 31

(63) 255025

(64) — 1

(65) 98000

(66) 11990

(67) 37

(68) — 616

(69) .0625 or $\frac{1}{16}$

*(70) 75 — 82

(71) $\frac{8}{45}$

(72) 1

(73) $-1\frac{11}{15}$

(74) 6

(75) 54

(76) 2

(77) 4

(78) $-\frac{1}{3}$

(79) 160

*(80) 5053 — 5584

University Interscholastic League - Number Sense Answer Key HS • State • 2006

*number) x — y means an integer between x and y inclusive

NOTE: If an answer is of the type like $\frac{2}{3}$ it cannot be written as a repeating decimal

(1) 4040

(2) 6.5

(3) $1\frac{7}{24}$

(4) 2006

(5) 289

(6) — 4

(7) .33 or $\frac{33}{100}$

(8) 2197

(9) $\frac{11}{1000}$

*(10) 1733 — 1914

(11) $13\frac{3}{4}$

(12) 11

(13) $\frac{1}{4}$

(14) 9

(15) 2226

(16) 10.1, $10\frac{1}{10}$, $\frac{101}{10}$

(17) 396

(18) — 28

(19) — 66

*(20) 218 — 240

(21) 272

(22) 3210

(23) $67\frac{9}{38}$

(24) — 24.75, $-24\frac{3}{4}$, $-\frac{99}{4}$

(25) $\frac{7}{24}$

(26) 35

(27) 254

(28) 9672

(29) 1

*(30) 12109 — 13383

(31) 112

(32) 1011

(33) 1728

(34) $ 21.00

(35) 2220

(36) 63.84

(37) 63

(38) — 2

(39) 13013

*(40) 2254 — 2491

(41) .025 or $\frac{1}{40}$

(42) .04 or $\frac{1}{25}$

(43) $3\frac{1}{156}$

(44) 20

(45) 1

(46) 3300

(47) 2

(48) $\frac{13}{14}$

(49) $\frac{9}{430}$

*(50) 1259 — 1391

(51) 7

(52) — 9

(53) 550

(54) 1

(55) $\frac{7}{36}$

(56) 5625

(57) 4.8, $4\frac{4}{5}$, $\frac{24}{5}$

(58) 25194

(59) 60

*(60) 2,669,364 — 2,950,348

(61) 14400

(62) 324

(63) — 1

(64) 362404

(65) 16770

(66) 64

(67) 1014

(68) 185

(69) $2\frac{1}{3}$ or $\frac{7}{3}$

*(70) 347 — 383

(71) 9

(72) $\frac{7}{9}$

(73) 196

(74) $-2\frac{16}{25}$

(75) — 12

(76) $-\frac{1}{3}$

(77) 6

(78) — 3

(79) — 144

*(80) 5053 — 5584