

Number Sense Exam 040, 9/9/2017

- (1) $2010 + 2009 =$ _____
- (2) $11(7) + 8(11) - 9(11) =$ _____
- (3) $72 \div 9 \div 2 + 6 \times 4 =$ _____
- (4) $19^2 =$ _____
- (5) $17^2 =$ _____
- (6) $14^2 =$ _____
- (7) $735625 \div 11$ has a remainder of _____
- (8) $\frac{3}{5} \div \frac{9}{25} =$ _____
- (9) $138 \div 5 =$ _____ (decimal)
- *(10) $422 + 424 + 222 - 444 =$ _____
- (11) $.2111\dots =$ _____ (proper fraction)
- (12) $\text{LCM}(35, 55) \times \text{GCD}(35, 55) =$ _____
- (13) 24% of 80 = _____ % of 240
- (14) $5 + 10 \times 15 \div 20 - 25 =$ _____
- (15) $26 \times 16 =$ _____
- (16) $1\frac{2}{3} \times 2\frac{3}{4} =$ _____ (mixed number)
- (17) The average of 21, 18, and 33 is _____
- (18) $4 + 12 + 20 + 28 + \dots + 44 =$ _____
- (19) The GCD of 54 and 36 is _____
- *(20) $412 \times 398 - 3000 =$ _____
- (21) Which of the following is a triangular number: 9, 15, or 18? _____
- (22) $27 \times 27 =$ _____
- (23) Set $E = \{e, v, i, l\}$, set $L = \{l, u, c, k, y\}$, and set $P = \{p, r, i, m, e\}$. $(E \cup P) \cap L$ contains _____ distinct elements
- (24) A 3-element set has _____ improper subsets
- (25) $.444\dots + .777\dots =$ _____
- (26) 56 has _____ positive integral divisors
- (27) The median of 1, 3, 2, 7, 9, and 8 is _____
- (28) $3.222\dots - 2.333\dots =$ _____
- (29) 36 is 24% of _____
- *(30) $6543 \times 876 =$ _____
- (31) The area of an equilateral triangle is $3\sqrt{3}$ cm². The height of the triangle is _____ cm
- (32) The area of a square is 6.25 sq. units, then the perimeter of the square is _____ units
- (33) The multiplicative inverse of -1.25 is _____
- (34) $72^2 + 13^2 =$ _____
- (35) Find k if $18^2 - 15^2 = 11k$. $k =$ _____
- (36) $324_6 =$ _____ ₁₀
- (37) $(20 \times 42) - (18 \times 22) =$ _____
- (38) $6\frac{1}{2} \times 4\frac{1}{3} =$ _____ (mixed number)
- (39) The perimeter of an equilateral triangle is 18". The area of the triangle is $k\sqrt{3}$ in². $k =$ _____
- *(40) $\sqrt{2007} \times \sqrt{2116} =$ _____
- (41) If $2^{2.84} = 7.16$, then $2^{1.84} =$ _____
- (42) The complementary angle of 74° is _____ $^\circ$

- (43) The sum of the roots of $3x^3 + 2x^2 = 9$ is _____
- (44) A $30^\circ - 60^\circ$ right triangle has a hypotenuse of 6.
The length of the short leg is _____
- (45) The next term of 1, 1, 2, 4, 3, 9, 4, ... is _____
- (46) 123 base 4 equals _____ base 2
- (47) If A is $\frac{2}{3}$ of B and B is $\frac{3}{4}$ of C , then C is what percent of A ? _____ %
- (48) $125 \times 102 =$ _____
- (49) In a $45^\circ - 45^\circ$ right triangle, one leg is 5 cm. The other leg is _____ cm.
- *(50) $171097 \div 111 =$ _____
- (51) $151 \times 115 =$ _____
- (52) Find k , so that the four digit number $31k8$ is divisible by 9. _____
- (53) $\sqrt{17424} =$ _____
- (54) $12 + 6 + 3 + \dots =$ _____
- (55) The probability of losing is $8\frac{1}{3}\%$. What are the odds of losing? _____ (fraction)
- (56) $\sin\left(\frac{\pi}{3}\right) \times \sec\left(\frac{\pi}{6}\right) =$ _____
- (57) $15^2 - 14^2 + 13^2 - 12^2 =$ _____
- (58) $74 \times 66 + 8 =$ _____
- (59) $222_4 - 33_4$ _____ $_4$
- *(60) $571428 \times 148 =$ _____
- (61) The slope of the line containing the points $(-1, -2)$ and $(3, 4)$ is _____
- (62) If y varies inversely with x and $y = 2$ when $x = 5$, find y when $x = 3$. _____
- (63) Vector $u = (-2, 1)$ and vector $v = (4, -3)$. The dot product for u and v is _____
- (64) $A = \begin{bmatrix} 1 & 2 \\ 5 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 4 \\ 7 & 8 \end{bmatrix}$. Find $|A - B|$. _____
- (65) $2 - \left(\frac{11}{12} + \frac{12}{11}\right) =$ _____
- (66) $31^2 - 33^2 + 35^2 - 37^2 =$ _____
- (67) The horizontal phase shift of $f(\theta) = 3 \cos(4\pi\theta - 6\pi) + 5$ is _____
- (68) $0.232323\dots_5 =$ _____ $_5$ (proper fraction)
- (69) If the diagonal of a face of the a cube is 6 in. then its volume is _____ cu. in.
- *(70) $1370974 \div 1111 =$ _____
- (71) $444 \times \frac{1}{27} =$ _____ (mixed number)
- (72) $\frac{1}{3} + \frac{1}{6} + \frac{1}{10} + \frac{1}{15} =$ _____
- (73) The minimum value of $y = x^2 + 2x - 3$ is _____
- (74) $\int_0^5 (5 - x) dx =$ _____
- (75) $4^3 - 3^3 + 2^3 - 1^3 =$ _____
- (76) $2^3 - 3^3 - 4^3 =$ _____
- (77) Find x , $1 \leq x \leq 5$, if $3x - 2 \equiv 3 \pmod{7}$. _____
- (78) If $f(x) = 3x^3 + 5x - 4$, then $f'(2) =$ _____
- (79) The sum of the first nine terms of the Fibonacci sequence $-3, 4, 1, 5, 6, \dots$ is _____
- *(80) $286 \times 357 =$ _____