

Number Sense Exam 070, 10/19/2018

- (1) $18^2 =$ _____
- (2) $8 \div 4 - 2 + 4 \times 8 =$ _____
- (3) $1206 \div 12 =$ _____ (decimal)
- (4) $.075 =$ _____ (fraction)
- (5) $(21 + 4)(19 + 18) =$ _____
- (6) $\frac{9}{40} =$ _____ (decimal)
- (7) $30.6 \div .4 =$ _____ (decimal)
- (8) $35 \times 13 =$ _____
- (9) $2007 + 207 + 27 =$ _____
- *(10) $94 \times 85 - 76 =$ _____
- (11) If 12 ounces of nuts costs \$1.25 then 3 pounds of nuts will cost \$ _____
- (12) The GCD of 42 and 63 is _____
- (13) 32 is 80% of what? _____
- (14) $3 + 8 + 13 + \dots + 43 =$ _____
- (15) Which is larger: $\frac{9}{13}$ or $\frac{7}{11}$? _____
- (16) $53 \times 53 =$ _____
- (17) $4\frac{2}{3}\% =$ _____ (fraction)
- (18) $31 + 331 + 1331 =$ _____
- (19) 17 is what % of 68? _____ %
- *(20) $412 \times 398 - 3000 =$ _____
- (21) The set $\{M, A, T, H\}$ has _____ subsets
- (22) $1 + 2 + 3 + 4 + \dots + 39 =$ _____
- (23) $0.444\dots - 0.888\dots =$ _____
- (24) Which of the following is a perfect number: 14, 28, or 42? _____
- (25) A pentagon has _____ distinct diagonals
- (26) $.166\dots + .333\dots + .8333\dots =$ _____
- (27) If $f(x) = x^2 - 8x + 16$ then $f(24) =$ _____
- (28) 3.2 kilograms = _____ decigrams
- (29) 315 base 6 equals _____ base 10
- *(30) 87% of 5590 = _____
- (31) If $5^x = 625$, then $x^3 =$ _____
- (32) If $h > 1$ and $h^6 \div h^4 \times h^3 = h^k$, then $k =$ _____
- (33) Find k if $78^2 - 72^2 = 6k$. $k =$ _____
- (34) If $49 = x^2 - y^2$ and x, y are positive integers, then $x =$ _____
- (35) If x and y are positive integers and $x^2 - y^2 = 53$, then $y =$ _____
- (36) $4^2 + 3$ _____ 7
- (37) If $\sqrt{15 + \sqrt{10 + \sqrt{x}}} = 5$, then $x =$ _____
- (38) If $\sqrt{12} + \sqrt{48} = \sqrt{x}$, then $x =$ _____
- (39) If $x + (x+3) + (x+6) + (x+9) + \dots + (x+24) = 144$, then $(x + 12) =$ _____
- *(40) $43821 \div 126 =$ _____
- (41) $\frac{5}{8} - \frac{54}{89} =$ _____
- (42) $86^\circ\text{F} =$ _____ $^\circ\text{C}$
- (43) $442_6 + 55_6 =$ _____ 6

- (44) If A is 70% of B and B is 80% of C , then A is what percent of C ? _____ %
- (45) 123 base 4 equals _____ base 2
- (46) $6! \div 4! =$ _____
- (47) If $3x - 1 > 14$ then $x >$ _____
- (48) The slope of the line $3x - ky = 5$ is .75. $k =$ _____
- (49) The units digit of $13^7 =$ _____
- *(50) $\sqrt{7305612} =$ _____
- (51) $\frac{7! + 3!}{5!} =$ _____ (mixed number)
- (52) How many distinct 5 letter words, real or imaginary, can be made using the letters s, c, o, t, t ?
- (53) 12.5% of a mile = _____ yards
- (54) The circle $x^2 + y^2 - 2x - 4y = 11$ has a radius of _____
- (55) $301 \times 301 =$ _____
- (56) If x varies directly with y^3 and $x = 2$ when $y = 2$, find x when $y = 4$. $x =$ _____
- (57) If $(\sqrt[3]{a^4})(\sqrt[5]{a^k}) = \sqrt[15]{a^{26}}$, then $k =$ _____
- (58) The Cartesian product of $\{1, 2, 3\}$ and set A contains 15 ordered pairs. The number of elements in set A is _____
- (59) If $\log_5 x = -3$, then $x =$ _____
- *(60) $18^3 \div 9^2 \times 11 =$ _____
- (61) The first four digits of the decimal for $\frac{17}{45}$ is 0. _____
- (62) $123_4 \div 3_4 =$ _____
- (63) The determinant of $\begin{bmatrix} 1 & 1 & 2 \\ 2 & 1 & 3 \\ 3 & 1 & 4 \end{bmatrix}$ is _____
- (64) If $\ln(48) = \ln(6) + 3 \ln(x)$, then $x =$ _____
- (65) 132 feet per second = _____ miles per hour
- (66) $2 \sin 15^\circ \sin 75^\circ =$ _____
- (67) The sum of the coefficients of $(2x + 3y)^3$ is _____
- (68) $50^2 - 48^2 + 46^2 - 44^2 =$ _____
- (69) $10^{\log 3} =$ _____
- *(70) $(\pi)^3 \times (e)^3 =$ _____
- (71) If $\begin{bmatrix} 3 & 1 \\ 2 & 2 \end{bmatrix} \times \begin{bmatrix} 2 & 1 \\ 4 & 1 \end{bmatrix} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, then $b =$ _____
- (72) $2 \times 3 \times 5 \times 7 =$ _____
- (73) Change .12 base 3 to a base 10 fraction. _____
- (74) The minimum value of $\sin 2x - 3$ is _____
- (75) Change $\frac{38}{125}$ to a base 5 decimal. _____
- (76) $2^6 \times 5^4 =$ _____
- (77) $\int_0^1 1 - x^2 dx =$ _____
- (78) If $f(x) = \frac{3x + 5}{6x + 4}$, then $f' \left(-\frac{1}{2} \right) =$ _____
- (79) The function $f(x) = \frac{(x - 2)(x + 1)}{(x + 1)}$ has a hole in its graph at $x =$ _____
- *(80) $(195 \times 216^2) \div (216 \times 195^2) \times 142857 =$ _____