

Number Sense Exam 062, 3/21/2018

- (1) The LCM of 84 and 63 is _____
- (2) $11 \times 37 =$ _____
- (3) $343 \div 9 =$ _____ (mixed number)
- (4) $309 - 903 =$ _____
- (5) $\frac{7}{15} + \frac{5}{11} =$ _____
- (6) $11 \times 76 =$ _____
- (7) $2\frac{1}{3} \div 3\frac{1}{2} =$ _____
- (8) $\frac{1}{7} =$ _____ % (mixed number)
- (9) $812 - 218 =$ _____
- *(10) $7766 - 555 + 44 =$ _____
- (11) $28 \div 3\frac{1}{2} =$ _____
- (12) $12\frac{1}{2}\%$ of one gallon = _____ ounces
- (13) The average of 18, 29, and 16 is _____
- (14) If 12 ounces of nuts costs \$1.25 then 3 pounds of nuts will cost \$ _____
- (15) $11^4 \div 11 =$ _____
- (16) 1 quart + 1 pint + 1 cup = _____ fluid ounces
- (17) $17 \times \frac{17}{21} =$ _____ (mixed number)
- (18) $15 \times 38 =$ _____
- (19) 42 is what percent of 60? _____ %
- *(20) $(48 \div 3 \div 2 \times 5)^3 =$ _____
- (21) $8\frac{1}{8} \times 16\frac{1}{8} =$ _____ (mixed number)
- (22) 4 pints is what percent of a gallon? _____ %
- (23) $3^4 + 2^5 - 4^3 = k^2$. $k =$ _____
- (24) $3663 \div 111 =$ _____
- (25) $4\frac{7}{12} \times 2\frac{2}{5} =$ _____
- (26) $21^2 + 63^2 =$ _____
- (27) $312_7 =$ _____ ₁₀
- (28) The GCD of 26, 52, and 70 is _____
- (29) 3.5 pints = _____ quarts
- *(30) $14 \times 11 \times 33 =$ _____
- (31) $.212121\dots =$ _____ (fraction)
- (32) Set $A = \{m, e, n, t, a, l\}$ and set $B = \{m, a, t, h\}$. $A \cap B$ contains how many elements? _____
- (33) If $A = \{v, o, l, u, m, e\}$ and $B = \{r, a, d, i, u, s\}$, then $A \cap B$ has _____ unique elements
- (34) $45_9 =$ _____ ₈
- (35) If $x + (x + 3) + (x + 6) + (x + 9) + (x + 12) = 105$, then $(x + 6) =$ _____
- (36) $f(x) = 9x^2 + 6x + 1$. Find $f(7)$. _____
- (37) A ticket costs \$5.75. 12 tickets costs \$ _____
- (38) If $2x^3 + 3x^2 - 11x - 6 = 0$ and $P, Q,$ and R are the real roots, then $PQ + QR + PR$ is _____
- (39) $5^{-1} + x^{-1} = 3^{-1}$, then $2x =$ _____
- *(40) $43821 \div 126 =$ _____
- (41) Find k such that $7k6$ is the smallest 3-digit number divisible by 9 _____
- (42) If $512 = x^2 - y^2$ and x, y are positive triangular numbers, then $x =$ _____
- (43) Find the area of a triangle with side lengths of 11 cm, 60 cm, and 61 cm. _____ cm^2

- (44) A triangle has sides of 9, x , and 13. What is the greatest integral value of x ? _____
- (45) $5^3 \times 2^5 =$ _____
- (46) If $xy = 2$ and $x + y = 4$, then $x^3 + y^3 =$ _____
- (47) The next term of the sequence 4, 11, 18, 25, ... is _____
- (48) If $4 - 5x > 3$, then $x <$ _____
- (49) $312_4 =$ _____ $_2$
- *(50) $3^9 \div 6^6 \times 9^3 =$ _____
- (51) $\frac{3}{4} + \frac{1}{2} + \frac{1}{3} + \dots =$ _____
- (52) The legs of a right triangle are 8 and 15. The length of the altitude to the hypotenuse is _____
- (53) $(4 - i)^2 = a + bi$, and $a =$ _____
- (54) Let $\frac{7!}{5!} = \frac{(x-1)!}{(x-2)!}$. Find x . _____
- (55) 12.5% of 1 quart = _____ ounces
- (56) $\log_4 32 + \log_4 2 + \log_4 1 =$ _____
- (57) $126 \times 214 =$ _____
- (58) $5772 \div 111 =$ _____
- (59) $221 \times 141 =$ _____
- *(60) $16 \times 18 \times 20 =$ _____
- (61) $(2 + 3i)(4 - 5i) = a + bi$ and $b =$ _____
- (62) If $\sin \theta = .1$, then $\csc \theta =$ _____
- (63) The sum of the coefficients of $(a + b)^3$ is _____
- (64) If flipping 5 coins, what is the probability of getting 3 tails and 2 heads? _____
- (65) 24 is _____ % of 192
- (66) The volume of a sphere with radius 3 in. is $k\pi$ cu. in. and $k =$ _____
- (67) If $x > 0$ and $x + 1 = \sqrt{x^2 - 3x + 11}$, then $x =$ _____
- (68) Let $f(x) = [x]$ be the greatest integer function. Find $f(3\sqrt{3})$. _____
- (69) $(66_9)(77_9) \div 8$ has a remainder of _____
- *(70) $314 \times 27.2 \times 1.62 =$ _____
- (71) Find k , $0 < k < 5$, if $4k - 1 \equiv 1 \pmod{6}$. _____
- (72) The greatest integer function is $f(x) = [x]$. Find $f(\sqrt{10})$. _____
- (73) A number is randomly selected from the set of digits. What is the probability that the number is a perfect number? _____ (proper fraction)
- (74) $\int_0^2 x^2 dx =$ _____
- (75) $6^3 - 5^3 + 4^3 =$ _____
- (76) The smaller root of $8x^2 + 25x + 3 = 0$ is _____
- (77) If $f(x) = 2 + \frac{3}{4-x}$, then $f^{-1}(5) =$ _____
- (78) $1^3 + 2^3 + 3^3 + 4^3 + 5^3 =$ _____
- (79) Find the slope of the tangent to $y = x^2 - 1$ at $(2, 3)$. _____
- *(80) $285714 \times (.28) =$ _____