

Number Sense Exam 022, 4/19/2017

- (1) $48 \times 75 =$ _____
- (2) $2\frac{3}{4} - 3\frac{4}{5} =$ _____ (mixed number)
- (3) $1\frac{1}{16}\% =$ _____ (decimal)
- (4) $\frac{3}{4} \times \frac{8}{9} =$ _____
- (5) Which is larger: $\frac{3}{5}$ or $\frac{7}{9}$? _____
- (6) $2\frac{3}{4}\% =$ _____ (proper fraction)
- (7) $2005 + 5002 =$ _____
- (8) $\frac{1}{16} =$ _____ % (decimal)
- (9) $626 \div 8 =$ _____ (decimal)
- *(10) $3913 + 309 + 2013 =$ _____
- (11) $20\frac{1}{4} - 12\frac{1}{6} =$ _____ (mixed number)
- (12) The range of 3, 14, 20, and 9 is _____
- (13) The sum of the prime divisors of 42 is _____
- (14) $1\frac{7}{9} \times 2\frac{1}{4} =$ _____
- (15) $63 \times 63 =$ _____
- (16) $\text{LCM}(12, 20) \times \text{GCD}(12, 20) =$ _____
- (17) $11235813 \div 6$ has a remainder of _____
- (18) $\frac{9}{10} + \frac{11}{12} =$ _____ (mixed number)
- (19) The GCD of 66 and 78 is _____
- *(20) $\sqrt{173468} =$ _____
- (21) Truncate $(\sqrt{2})(\sqrt{3})$ to the tenths place. _____
- (22) $\sqrt{50 \times 32} =$ _____
- (23) A square has an area of 12.25 sq. cm. Its perimeter is _____ cm.
- (24) $3728045 \div 8$ has a remainder of _____
- (25) $66 \times \frac{66}{71} =$ _____ (mixed number)
- (26) $(24 \times 7 - 6) \div 5$ has a remainder of _____
- (27) 80 has _____ positive prime divisors
- (28) $66^2 + 54^2 =$ _____
- (29) 37.5% of a gallon is _____ pints
- *(30) $138 \times 3 \times 142 =$ _____
- (31) Find the slope of the line perpendicular to the line $6x - 2y = 4$. _____
- (32) $375 \times 408 =$ _____
- (33) The multiplicative inverse of 2.5 is _____
- (34) The 6th pentagonal number is _____
- (35) If the diagonal of a square is $\frac{3\sqrt{2}}{4}$ inches, then the perimeter of the square is _____ inches
- (36) $14443 \times 17 =$ _____
- (37) $3 \times 4! + 12 \times 3! =$ _____
- (38) If x is to 4 as 5 is to 9, then $x =$ _____
- (39) If $5! + 4! = (k)(3!)$, then $k =$ _____
- *(40) $29 \times 21430 \times 156 =$ _____
- (41) A pentagon has _____ distinct diagonals.
- (42) The measure of the interior angles of a regular hexagon is $k\pi$ radians. $k =$ _____
- (43) If $x + y = -3$ and $xy = -4$, then $x^3 + y^3 =$ _____
- (44) $\frac{3}{14} =$ _____ %
- (45) $45 \times 55 =$ _____
- (46) 2 miles = _____ yards

- (47) If $2^{-1} + x^{-1} = 8^{-1}$, then $x =$ _____
- (48) The units digit of 9^6 is _____
- (49) The largest integer x such that $3 + 2x < 15$ is
 $x =$ _____
- *(50) $45678 \div 143 =$ _____
- (51) $4^{-1} \div 4^2 =$ _____
- (52) Given the sequence $3, 8, 11, 19, \dots, 79, k, 207$.
 Find k . _____
- (53) ${}_5P_3 \times {}_5C_3 =$ _____
- (54) $(3 - 5i)(3 - 5i) = a + bi$. Find $a + b$. _____
- (55) A triangle has integral sides of $x, 22$, and $2x$. The
 smallest value of x is _____
- (56) $(4 + 3i) \div 2i = a + bi$ and $b =$ _____
- (57) $\frac{\pi}{18}$ radians = _____ degrees
- (58) The second term of the expansion of $(x + 2y)^4$ has
 a coefficient of _____
- (59) $(2 - 5i)(3 + 2i) = a + bi$. Find $a + b$. _____
- *(60) $\sqrt[3]{215346} \times \sqrt{3690} \times 57 =$ _____
- (61) If $f(x) = \frac{2 + 3x}{4}$, then $f^{-1}(-1) =$ _____
- (62) If $A = \begin{bmatrix} 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 3 \\ 2 \end{bmatrix}$ then $AB =$ _____
- (63) The slope of the line $3x + 4y - 5 = 0$ is _____
- (64) $8883 \div 987 =$ _____
- (65) If the radius of a sphere is tripled, then the volume
 is multiplied by _____
- (66) $24_7 \div 6_7 + 24_7 =$ _____ $_7$
- (67) The shortest distance between the line $4x + 3y =$
 11 and the point $(-2, 3)$ is _____
- (68) If $9^{x-1} = 27^{x+2}$ then $x =$ _____
- (69) $\frac{5}{6} + 1.2 - 2 =$ _____
- *(70) $4.8^3 \times 6.3^3 =$ _____
- (71) $f(x) = x^4 + 4x^3 + 6x^2 + 4x + 1$. Find $f'(-1) =$ _____
- (72) $\frac{8}{7} + \frac{7}{8} - 2 =$ _____
- (73) $\sum_{k=1}^3 k^k =$ _____
- (74) If $f(x) = 2x - 1$, then $f^{-1}(3) =$ _____
- (75) $\int_2^4 (5x - 1) dx =$ _____
- (76) The 5th pentagonal number is _____
- (77) The distance between the lines $3x - 4y = 7$ and
 $3x - 4y = 10$ is _____
- (78) If $f(x) = \frac{(3x + 2)}{(7x - 4)}$, the horizontal asymptote is
 $y =$ _____
- (79) $\cos^{-1}(.8) + \cos^{-1}(.6) = k\pi$, then $k =$ _____
- *(80) $15 \times 31 + 16 \times 32 =$ _____