Name Answer Key Class_____ Date_____

8TH GRADE MATHEMATICS TEST PREP

11. Which equation does **not** represent a linear function of x?

a. $y = -\frac{3}{4}x$ b. $y = \frac{x}{2}$ c. $y = -3 + 2x$ d. $y = 3x^2 - 2$

exponent

12. A water tank is in the shape of a right circular cylinder with a height of 20 feet and a volume of 320π. What is the diameter, in feet, of the water tank?

a. 16 b. 10 c. 8 d. 4

$V = \pi r^2 h$

$\frac{320\pi}{20\pi} = \frac{\pi r^2 (20)}{20\pi}$

$\sqrt{16} = \sqrt{r^2}$

$4 = r$

$\boxed{8 = d}$

13. Which phrase best describes the graph of y = -2x +5?

a. a U-shaped curve that opens upward

b. a U-shaped curve that opens downward

c. a line that falls from left to right

d. a line that rises from left to right

14. What is the solution to the equation below?

$3(2x-4)+2(x+7)=6$

a. $x = \frac{3}{8}$ b. $x = \frac{1}{2}$ c. $x = \frac{4}{5}$ d. $x = \frac{11}{8}$

$6x - 12 + 2x + 14 = 6$

$8x + 2 = 6$

$-2 \quad -2$

$\frac{8x}{8} = \frac{4}{8}$

$\boxed{x = 1/2}$

15. A line has a slope of $-\frac{1}{3}$ and passes through the origin. Which point lies on this line?

a. (-3, -1) b. (-1, 3) c. (3, -1) d. (3, 1)

(3,-1)

16. Which equation is true for all of the values of x and y shown in the table?

x	y
$-\frac{1}{2}$	-2
$\frac{1}{2}$	2
1	1

15) $y = -\frac{1}{3}x$

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

$-1 = -1$

true.

a. $y = \frac{1}{x}$ b. $y = \frac{4}{x}$ c. $y = 4x$ d. $y = x$

$y = \frac{1}{-1/2}$ $y = \frac{1}{1/2}$

$\boxed{y = -2}$ $\boxed{y = 2}$

$y = \frac{1}{1}$

$\boxed{y = 1}$

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17. Calculate: $\frac{4^8}{4^{-4}}$

$4^{8-(-4)}$ 4^{12}

a. 4^{-32} b. 4^{-2} c. 4^4 d. 4^{12}

18. Which expression is equivalent to the fraction shown below?

$$\frac{2.4 \times 10^8}{4.8 \times 10^{-2}}$$

a. $.5 \times 10^{-4}$

b. $.5 \times 10^6$

c. 5×10^{11}

d. 5×10^9

1) $2.4 \div 4.8 = 0.5$

2) $10^{8-(-2)} = 10^{10}$

3) $0.5 * 10^{10-1}$

4) $5 * 10^9$

19. Vertex D of rectangle ABCD is located at (3, -6). A dilation of ABCE will result in the image A'B'C'D'. If the dilation is centered at the origin and has a scale factor of 2, what is the coordinate of D'?

a. (1, -2)

b. (6, -12)

c. (5, -4)

d. (-6, 3)

$D(3,-6) \rightarrow D(3*2, -6*2)$

$D'(6,-12)$

20. A system of equations is shown below.

$2(2x + 5y = 8)$

$4x + 10y = 16$

$4x + 10x = 16$

equations are equivalent

Which statement is about the ordered pair (-1 ,2) is true?

∞ many Solutions.

a. It is a solution to the first but not the second equation.

b. It is one of many solutions to the system.

c. It is not a solution to either equation.

d. It is the only solution in the system.

$2x + 5y = 8$

$2(-1) + 5(2) = 8$

$-2 + 10 = 8$

$8 = 8$

true.

$4x + 10y = 16$

$4(-1) + 10(2) = 16$

$-4 + 20 = 16$

$16 = 16$

true