

Name _____

My Midterm is on: _____

Foundations of Math I

Midterm Review (2018)

<p>1.) Which statement best explains how to isolate x to the left side of the equation? $8x + 10 = 5x + 16$</p> <p>a. Divide $8x$ by 5 b. Add $8x$ and $5x$</p> <p>c. Add 5 to each side d. Subtract $5x$ from each side</p>	<p>2.) Mandy has $\\$41$ to spend at a carnival. The carnival charges $\\$14$ for admission and $\\$3$ per ride. What is the maximum number of rides that Mandy can go on?</p> <p>$\leq 3x + 14 \leq 41$</p> <p>a. 6 b. 7</p> <p>b. c. 8 d. 9</p> <p>$\frac{3x + 14 \leq 41}{-14 \quad -14}$</p> <p>$\frac{3x \leq 27}{3 \quad 3}$</p> <p>X = RIDES</p>
<p>3.) The admission to an amusement park is $\\$19.00$. Each ride costs an additional $\\$3.00$. Miguel only has $\\$35.00$. Which inequality could be used to determine the number of rides, x, Miguel can go on? \leq</p> <p>a. $22x \leq 35$ b. $3x + 19 \leq 35$</p> <p>c. $19x + 3 \leq 35$ d. $22x + 19 \leq 35$</p>	<p>4.) The heights of three brothers are consecutive even integers. The sum of their heights is 189 inches. Which equation could be used to solve for the height of the youngest brother?</p> <p>$n, n+2, n+4$</p> <p>a. $3x + 3 = 189$ b. $3x + 6 = 189$</p> <p>b. $3x + 4 = 189$ d. $3x + 12 = 189$</p>
<p>5.) The length of a rectangle is six more than its width. If the rectangle has a perimeter of 56 inches, what is the length of the rectangle?</p> <p>a. 11 inches b. 4 inches</p> <p>c. 17 inches d. 10 inches</p> <p>$L = W + 6$ $P = 2L + 2W = 56$</p> <p>$4W + 12 = 56$ $-12 \quad -12$ $\frac{4W = 44}{4 \quad 4} \quad W = 11$</p> <p>$W + L = 11 + 17 = 28$ $P = 56$</p>	<p>6.) Mason wants to purchase 4 binders and a backpack. If the backpack cost $\\$24$, which equation represents the situation if x denotes the cost per binder and y denotes the total cost for Mason's purchase?</p> <p>a. $y = 24x$ b. $y = 4x + 24$</p> <p>c. $y = 24x + 4$ d. $y = x + 24$</p> <p>X = BINDERS $y = 4x + 24$</p>
<p>7.) Solve the following equation for y:</p> <p>$-3x - 9y = 27$</p> <p>$\frac{-3x - 9y = 27}{+3x \quad +3x}{-9y = 3x + 27}{-9 \quad -9 \quad -9}$</p> <p>$y = -\frac{1}{3}x - 3$</p>	<p>8.) Solve the equation.</p> <p>$4(x - 3) = 4x - 12$</p> <p>$4x - 12 = 4x - 12$</p> <p>INFINITE SOLUTIONS</p>
<p>9.) What is the minimum value for x that satisfies the inequality?</p> <p>$-5(x - 2) + 8 < x$</p> <p>$-5x + 10 + 8 < x$ $-5x + 18 < x$ $+5x \quad +5x$</p> <p>$\frac{18 < 6x}{6 \quad 6} \quad 3 < x$ $x > 3$</p> <p>Smallest # that is > 3 is 4</p>	<p>10.) Solve for y:</p> <p>$3y + 4x = 15$</p> <p>$\frac{-4x - 4x}{3 \quad 3 \quad 3}$</p> <p>$\frac{3y = -4x + 15}{3 \quad 3 \quad 3}$</p> <p>$y = -\frac{4}{3}x + 5$</p>

11.) John is saving to buy a television that costs \$1,150. John currently has \$250 saved. He plans to save an additional \$75 each week. How many weeks will it take John to have \$1,150 saved?

$$75W + 250 = 1150 \quad 75W = 900$$

$$\underline{-250 \quad -250} \quad W = 12$$

12.) Solve the equation below:

$$5x - 11 = 20 - (x - 5)$$

$$5x - 11 = 20 - x + 5$$

$$5x - 11 = 25 - x$$

$$4x - 11 = 25$$

$$4x = 36$$

$$x = 9$$

13.) A. Find the solution for:

$$5x - 9 > 40 - 2x$$

$$\begin{array}{r} +2x \quad +2x \\ \hline 7x - 9 > 40 \\ +9 \quad +9 \\ \hline 7x > 49 \\ \hline x > 7 \end{array}$$

B. Name three solutions.

8, 9, 10, ...

14.) A hot dog stand charges \$3.75 for each hot dog and \$1.25 for each drink. If John bought 5 hotdogs and some drinks and spent \$22.50, how many drinks did he buy?

$$3.75(5) + 1.25x = 22.50$$

$$18.75 + 1.25x = 22.50$$

$$1.25x = 3.75$$

$$x = 3 \text{ drinks}$$

15.) A car rental company charges \$50.75 per day, plus \$0.37 per mile. Carol rented a car for two days and was charged \$159.22. How many miles did Carol drive the car?

$$50.75(2) + 0.37x = 159.22$$

$$101.50 + 0.37x = 159.22$$

$$0.37x = 57.72$$

$$x = 156 \text{ miles}$$

16.) Solve the equation below for x.

$$6(x - 5) - 3(x - 9) = 9$$

$$6x - 30 - 3x + 27 = 9$$

$$3x - 3 = 9$$

$$\underline{+3 \quad +3}$$

$$3x = 12$$

$$x = 4$$

17.) Find the solution to the inequality below:

$$7(2x - 8) - 5x < 6(4x + 9) - 5x$$

$$14x - 50 - 5x < 24x + 45 - 5x$$

$$9x - 50 < 19x + 45$$

$$-50 < 10x + 45$$

$$-101 < 10x$$

$$-10.1 < x$$

$$x > -10.1$$

18.) Solve the equation below:

$$5(x - 2) - (x + 3) = x - 8$$

$$5x - 10 - x - 3 = x - 8$$

$$4x - 13 = x - 8$$

$$3x = 5$$

$$x = 5$$

19.) The length of a rectangle is 5 times its width. If the perimeter is 120, what is the length of the rectangle? Draw a rectangle or use $P = 2L + 2W$.

$$2L + 2W = 120$$

$$L = 5W$$

$$2(5W) + 2W = 120$$

$$12W = 120$$

$$W = 10$$

$$L = 5(10) = 50$$

20.) Kevin bought 2.2 pounds each of sugar and flour. The sugar costs \$1.50 a pound and the flour cost \$0.75 a pound. Kevin split the cost of the sugar and flour evenly with his 2 neighbors. How much should each of them pay for the sugar and flour?

A. \$4.95

C. \$2.48

B. \$1.65

D. \$2.46

$$2.2(1.50) = 3.30$$

$$2.2(.75) = 1.65$$

$$\underline{4.95 \div 3}$$

21.) Simplify: $\frac{3}{4} - \frac{1}{8}$

$$\frac{6}{8} - \frac{1}{8} = \frac{5}{8}$$

22.) Karina bought $1\frac{1}{4}$ pounds of gummy bears, $2\frac{2}{3}$ pounds of sour patch kids and $4\frac{1}{12}$ pounds of M&Ms. How many pounds of candy did she buy?

$\frac{5}{4} + \frac{8}{3} + \frac{49}{12} = \frac{15}{12} + \frac{32}{12} + \frac{49}{12} = \frac{96}{12} = 8$ lbs

24.) Which of the following represents the statement below?
Twice a number h is 4 less than h .

A. $2h = h - 4$
B. $2h = 4 - h$
C. $2h \geq 4$
D. $2h \leq -4$

26.) Mrs. Cumbia calculated the volume of two cubes.
Cube M had a volume of 513 cm^3 .
Cube Q had a volume of 81 cm^3 .

What is the difference in the measures of the side lengths of Cube M and Cube Q?

Cube M side = 8
Cube Q side = 4.3
Difference = 3.7

28.) Use order of operations to solve:
 $((6 + 5)^2 + 4) - 11 - 2^2$

$((11)^2 + 4) - 11 - 2^2$
 $(121 + 4) - 11 - 4$
 $125 - 11 - 4 = 110$

30.) Calvin went to Marshall's and purchased a pair of jeans for \$25.75 and shoes for \$32.50. If tax was 7.5%, what was his total bill?

$25.75 + 32.50 = 58.25$
 $58.25 \cdot (.075) = 4.37$
 $58.25 + 4.37 = 62.62$

32.) The area of a trapezoid can be calculated using the following formula
 $A = \frac{1}{2}h(b_1 + b_2)$

Where h is the height and $(b_1 + b_2)$ are the lengths of the bases? Solve for b_1 .

$A = \frac{1}{2}h(b_1 + b_2)$
 $2A = h(b_1 + b_2)$
 $\frac{2A}{h} = b_1 + b_2$
 $b_1 = \frac{2A}{h} - b_2$

$\frac{2A}{h} = b_1 + b_2$
 $-b_2$

23.) Three times a number subtracted from 8 is the same as 2 subtracted from the number. What is the number?

$8 - 3n = n - 2$
 $8 = 4n - 2$
 $10 = 4n$
 $\frac{10}{4} = n$
 $n = 2.5$

25.) The value of $\sqrt{83}$ is between what two numbers?
9 and 10

27.) What is the sum of $\sqrt{256}$ and $\sqrt{81}$?

$\sqrt{256} = 16$
 $\sqrt{81} = 9$
Sum = 25

29.) Use order of operations to solve:
 $(6^2 + (12 - 3 + 4^2)) + 3^2$

$(36 + (12 - 3 + 16)) + 9$
 $(36 + (9 + 16)) + 9$
 $36 + 25 + 9 = 70$

31.) Sammie had the following test scores in math: 72, 96, 87, and 85. If he wants to have an overall test average of 85%, what must he score on his next test?

$\frac{72 + 96 + 87 + 85 + x}{5} = 85$
 $340 + x = 425$
 $x = 85$

33.) For the following expression,
 $-3t^2 + 2t - 7$

What are the coefficients? $-3, 2$
What are the constants? -7
What are the variables? t
What are the exponents? 2