**Pre-Algebra Problem Set 16** **First Name**_____ **Last**_____

Assigned Thursday 1/16/20, due Friday 1/24

**You will need a sheet of GRAPH PAPER.**

**1.** The choir is planning a trip to the water park. The cost to use a school bus is $350, and the students need to share the cost.

**a)** Complete the table.

**b)** Graph your result *on graph paper.*

**c)** Is this a proportional relationship? *Explain.*

| Number of Students on the Trip | Bus Cost per Student ($) |
|---|---|
| 10 | |
| 15 | |
| 20 | |
| 35 | |

**2.** Name the mathematical property that justifies each equation.

**a)** $6(237) = 6(200) + 6(30) + 6(7)$

**b)** $15 + 5 + 32 - 2 = (15 + 5) + (32 - 2)$

**c)** $(45)(54) = (54)(45)$

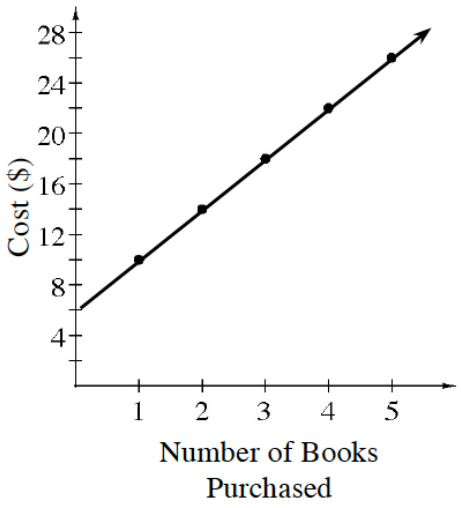
**d)** $98 + 576 + 2 = 98 + 2 + 576$

**3.** A stack of six bricks is two feet high.

**a)** How many bricks are in a stack 20 feet high?

**b)** How high is a stack of 20 bricks?

**4.** Is the relationship shown in the graph at right proportional? *Explain.*




**5.** A box contains 5 yellow, 10 orange, and 10 green tennis balls. If Izzy draws a tennis ball at random out of the box, what is the probability that she drew either a yellow or an orange tennis ball? Express your answer as a percent.

**6.** Make a portion web for each number: 2% 0.3 $\frac{2}{5}$ $\frac{2}{9}$ 109%

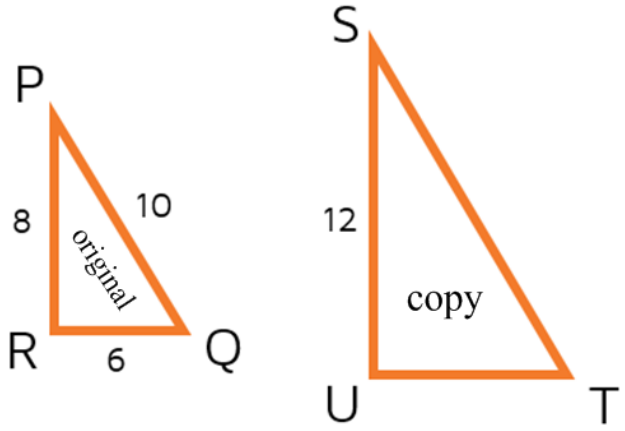
**7.** The lemonade stand at the county fair sells the lemonade at a price of two cups for $3.60.

**a)** Complete the table at right to find what Paula's family will pay to buy lemonade for all eight members of the family.

**b)** Is this relationship proportional? *Explain your answer.*

| # of Lemonades | Price (in dollars) |
|---|---|
| 1 | |
| 2 | 3.60 |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |

**8.** The triangles are similar.
**a)** What is the scale factor?
**b)** Find the lengths of the missing sides on the copy.




**Please *show your work* for #9 - #13.**

**9.** Katie keeps track of how many pushups she can do each day. Her most recent data is listed here: 12 51 14 12 13 11 10 13
**a)** Were there any outliers? If so, list them. If not, explain why.
**b)** Find the mean. **c)** Find the median. d) Find the range.

**10.** Evaluate each expression when a = 5, b = −5, x = −3, and y = −10.

**a)** $b - x - y$ **b)** $|a - b| + |x - y|$ **c)** $xy - 23\frac{8}{15}$

**d)** $axb^2$ **e)** $y^3 - y^2$ **f)** $a + x(b - y)$

**11.** Simplify each expression.

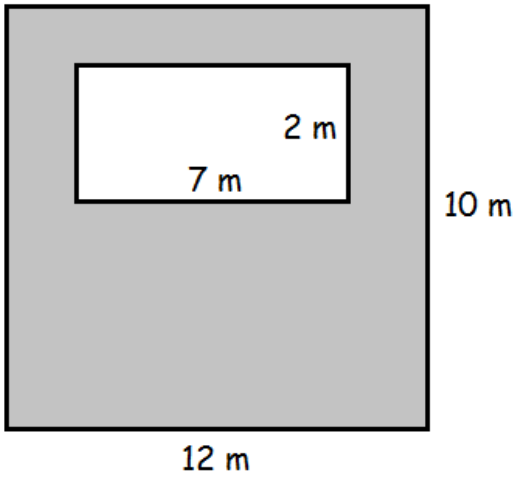
**a)** $\frac{3}{4}$ of $1\frac{3}{4}$ **b)** $9 \div 3\frac{1}{3}$ **c)** $3\frac{1}{3} \div 9$ **d)** $314\frac{1}{12} - 75\frac{5}{8}$

**11.** Simplify each expression.

**a)** $12 - 21.8$ **b)** $15.2 \div 0.04$ **c)** $0.314 \cdot 3.5$ **d)** $25 \div 0.8$

**13.** Find the *shaded area* for each shape.

**a)**




**b)**