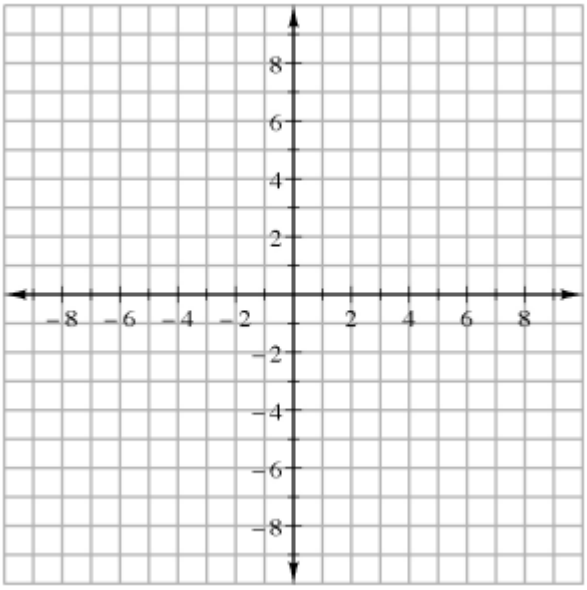
Pre-Algebra Set 20 **Name**_____

Assigned Thursday 2/20, due Friday 2/28

1**. a)** Plot the following points, and connect them in order.
$(-7, -4), (-2, -4), (-2, 0), (5, 0), (5, 2), (-7, 2), (-7, -4)$.



b) Find the area of your shape, in square units.

2. Which of the tables below shows a proportional relationship between x and y? Explain how you know.

a)

x	y
1	2
2	4
3	6
4	8

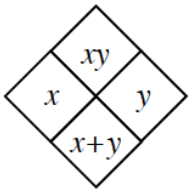
b)

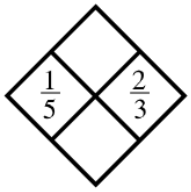
x	y
1	2
2	3
3	4
4	5

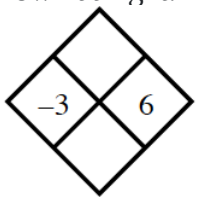
3. a) Are these two expressions equivalent? **Explain.** $5 + x^2$ $5 + 2x$

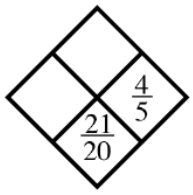
b) Are these two expressions equivalent? **Explain.** $x + 5 + x + x$ $5 + 3x$

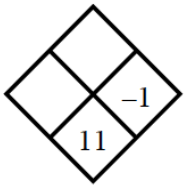
4. Copy and complete each of the Diamond Problems below. The pattern used in the Diamond Problems is shown at right.





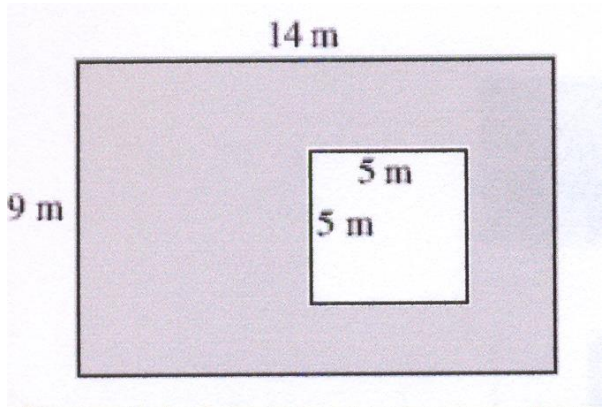




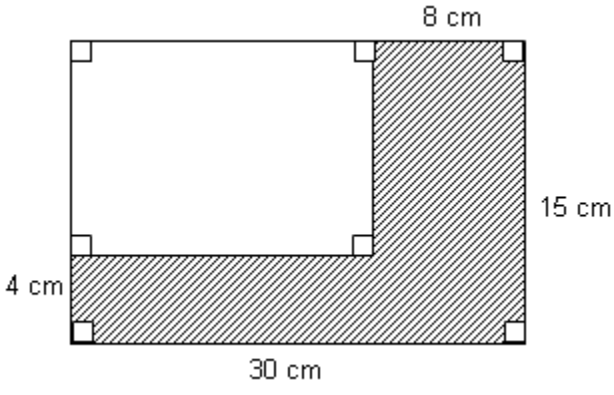


5. Find the shaded area.

a)



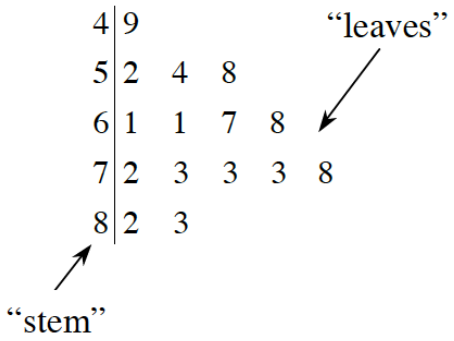
b)



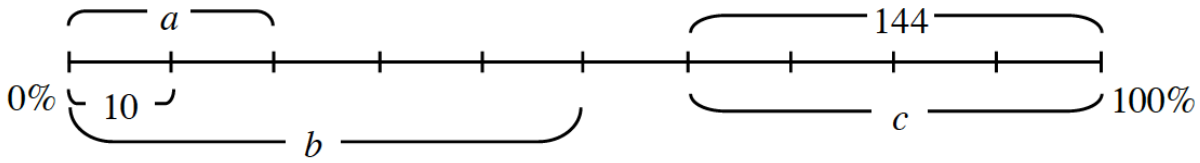
6. a) List the numbers in order from the stem and leaf plot.

b) Make a new stem and leaf plot for this data set:

21, 27, 30, 33, 38, 44, 46, 46, 62, 70, 75



7. Find the missing values **a**, *b*, and *c* on the diagram below. Assume that each line is evenly divided.



8. A fish tank that holds 80 gallons of water is 55% full.

a) Create a diagram like in Problem #7 above to represent the situation.

b) How many gallons are in the tank now?

c) How many more gallons are needed to fill the tank?

9. A shade of orange paint is made with 5 parts red paint and 15 parts yellow paint.

a) What percent of the paint is red?

b) What is the simplified ratio of yellow to red paint?

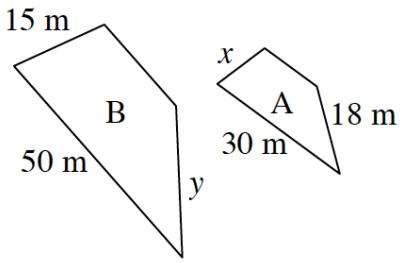
10. Janelle earned 90% on a test and got 63 points. How many total points were possible on the test? Draw a diagram to organize your information before solving the problem.

11. Simplify. **a)** $-\frac{4}{5} + \frac{3}{10}$ **b)** $9\frac{1}{8} - 4\frac{2}{3}$

12. The trapezoids are similar shapes.

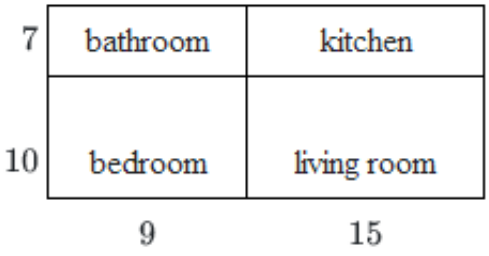
a) What is the scale factor from Shape A to Shape B?

b) Find the lengths of the missing sides.



13. The diagram below is the floor plan of Randy's apartment. All measurements are in feet. Use the diagram to answer the following questions.

a) What are the dimensions (length and width) of Randy's living room?

b) Randy's friends are coming to visit him soon. He plans to keep them out of his bedroom. Find the area of each of the other three rooms he will have to clean.

c) What is the total area of the rooms he will have to clean?