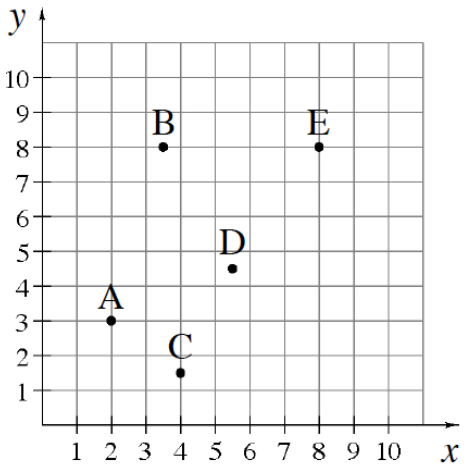
Pre-Algebra Problem Set 22 **Name**_____

Assigned Thursday 3/5, due Friday 3/20 (*2 weeks* due to conferences).

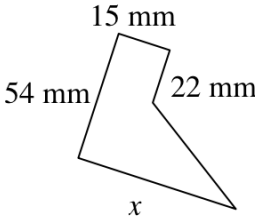
1. Write the points on the graph as ordered pairs.

a) A = (,) **b)** B = (,) **c)** C = (,)

d) D = (,) **e)** E = (,)



2. Find the lengths of the missing sides on the similar shapes below. What is the scale factor?



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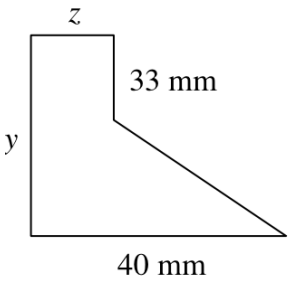

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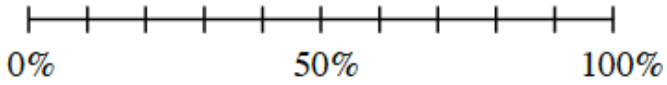
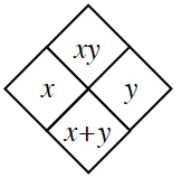
3. Ethan is trying to save $60 to buy new parts for his bike. He has saved 45% of what he needs so far. Draw a percent ruler to represent this situation.

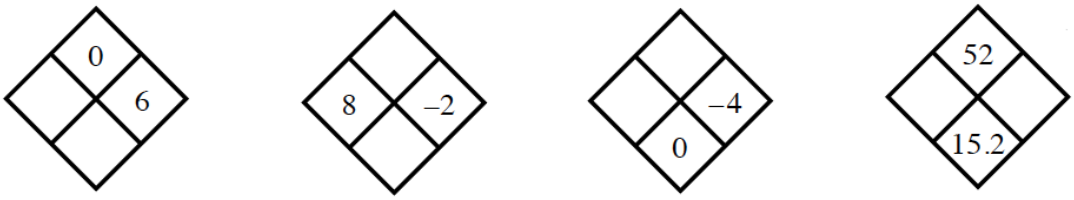


a) How much money has Ethan saved so far?

b) How much does Ethan still need to save? Write your answer as a dollar amount, and as a percent.

4. Copy and complete each of the Diamond Problems below.



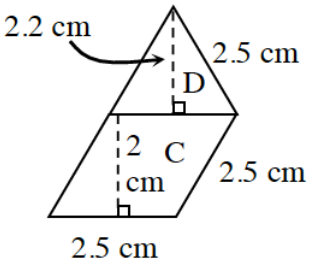


5. Multiple Choice: Which of the following expressions could be used to find the average (mean) of the numbers k, m, and n?

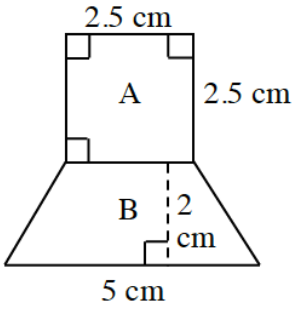
A) k + m + n **B)** 3(k + m + n) **C)** $\frac{k+m+n}{3}$ **D)** 3k + m + n

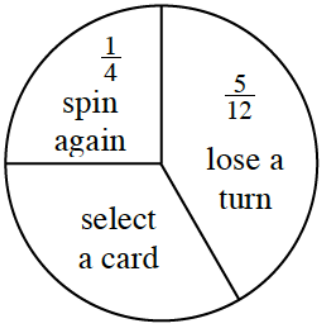
6. Manuel used pattern blocks to build the shapes below. The block marked A is a square, B is a trapezoid, C is a rhombus (a parallelogram with equal sides), and D is a triangle. Find the area of each of Manuel's shapes.

a)



b)





7. Sofia designed this spinner for a game.
a) Show how to find the probability of "select a card".
b) What is the probability that you will not select "spin again"?
c) What is more likely: to lose a turn or to select a card. Show how you know.

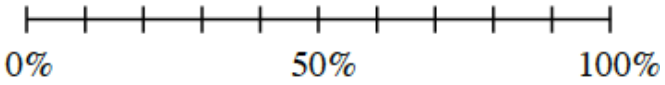
8. Lynn was shopping and found a purse that was marked with a discount of "$\frac{1}{3}$ off." If the original cost of the purse was $80, how much will Lynn pay?

9. Chase is designing a new game. He will have 110 different colored blocks in a bag. While a person is blindfolded, he or she will reach in and pull out a block. The color of the block determines the prize according to Chase's sign.

blue → small toy
purple → hat
green → large stuffed animal

a) If he wants players to have a 60% probability of winning a small toy, how many blue blocks should he have?
b) If he wants players to have a 10% probability of winning a large stuffed animal, how many green blocks should he have?

10. Ella has made twenty-nine note cards for her friends. She plans to send out a total of forty cards. What percentage of her cards has she finished? Represent your work with a percent ruler.

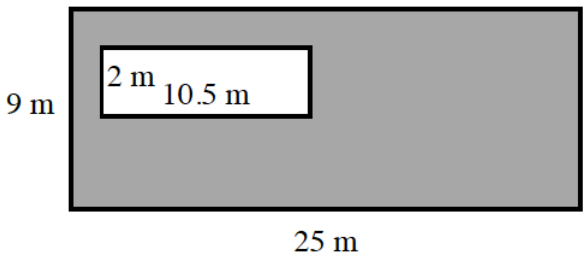


11. If you used a random number generator for the numbers from 1 through 20 to play a game, what is the theoretical probability of getting each of these outcomes?
a) A multiple of 3 *or* a multiple of 7, P(A multiple of 3 or a multiple of 7)
b) P(even or odd)
c) P(prime or 1)

12. Evaluate when x = −5, y = 8 and z = −10.

a) xyz^2 **b)** $(xyz)^2$ **c)** $3x^2 - y - 9$ **d)** $\frac{xy}{y+z}$

13. a) Find the shaded area.



b) Find the area.