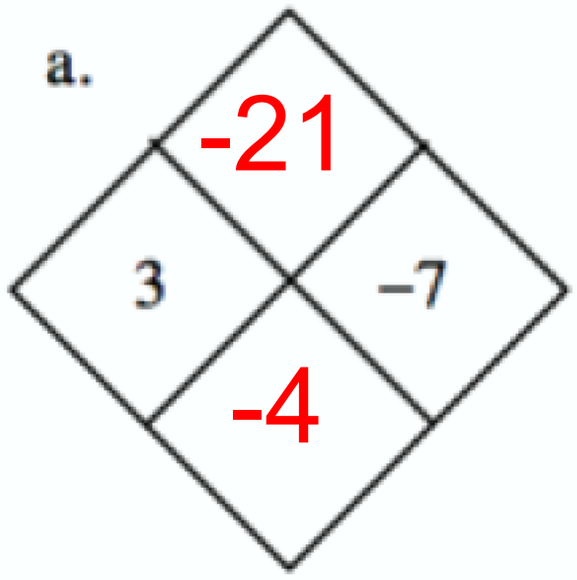
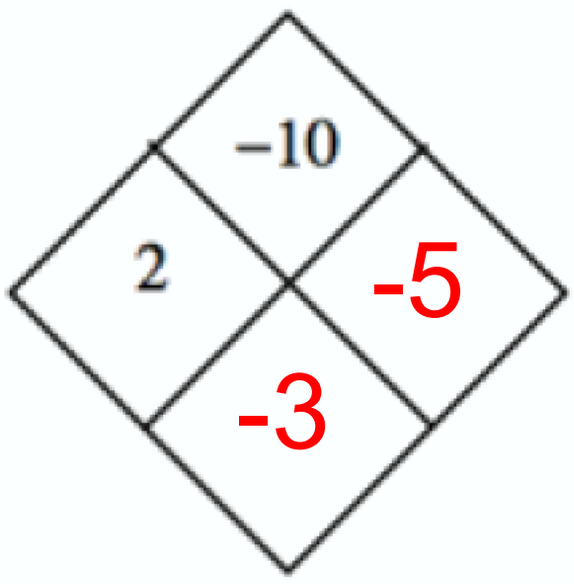
1.) Complete each of these Diamond Problems:

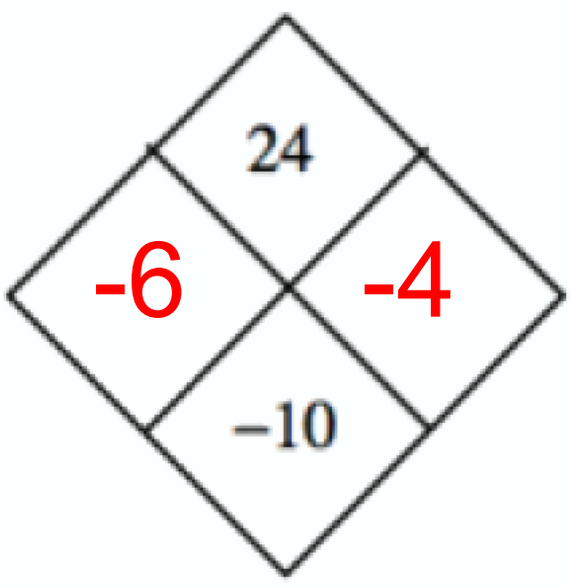
a.



b.



c.



2.) The sum of two numbers is negative. The product of these two same numbers is also negative. What can you conclude about these two numbers? Be as specific as you can. Give an example of two numbers that meet these requirements.

The numbers must have opposite signs. The number with the larger absolute value is the negative number. Ex. -8 and 5

3.) A study team is discussing multiplying integers.

Scott says, "Two negatives multiply to make a negative and two positives multiply to make a positive."

wrong, (-3)(-2) = 6

Aaron says, "No, it depends on what there are 'more of', like –10(3) is negative, but 5(–2) is positive."

wrong, 5(-2) = -10

Zachary says, "If the signs are the same it is positive, but if they signs are different, the product is negative."

correct!!!

Tina disagrees. "The sign of the product is the sign of the first number being multiplied."

wrong, (-2)(-5) =10

Who, if anyone, is correct? Give at least three examples to illustrate the concept these students are debating.

4) What is 62.5% as a decimal?

0.625

5) What is 0.2 as a percent?

20%

6) Find each product

a) $6\frac{1}{3} \cdot 5\frac{2}{5}$

$\frac{19}{\cancel{3}_1} \cdot \frac{\cancel{27}^{9}}{5}$

$\frac{171}{5} = 34\frac{1}{5}$

b) $3 \cdot 2\frac{1}{4}$

$\frac{3}{1} \cdot \frac{9}{4} = \frac{27}{4}$

$6\frac{3}{4}$

c) $2\frac{3}{4} \cdot 2\frac{1}{5}$

$\frac{11}{4} \cdot \frac{11}{5}$

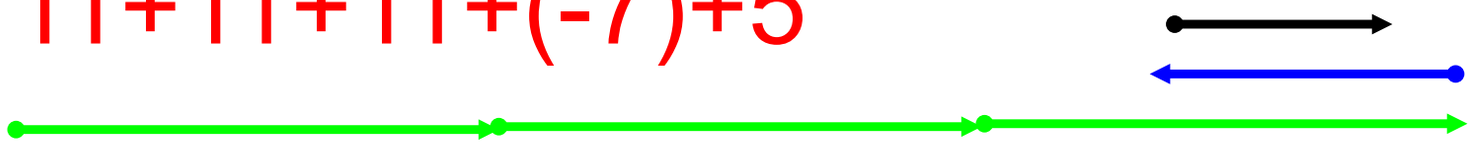
$\frac{121}{20} = 6\frac{1}{20}$

7.) The span of Cecil's tightrope is 31 feet, and the given lengths Cecil can move are 5 feet, 7 feet and 11 feet. Find **three different** ways to get Cecil across the tightrope. For each solution, draw a diagram that shows how the available lengths are combined to get Cecil across, **and** write the corresponding numeric solution.

5+5+5+5+11

7+7+7+5+5

11+11+11+(-7)+5



8.) Calculate the following, and then place them in order from least to greatest.

a. $-12 - 6$

-18

b. $-3 - (-7)$

4

c. $-3(-2) - 4(-3)$

18

-18, 4, 18

9.) A newspaper carrier can deliver 49 papers in one hour. At this rate, how many newspapers can the carrier deliver in three hours?

147 newspapers

10.) Find two integers that have a sum of –17 and a product of 52. What are the integers?

-4 and -13

11.) I'm thinking of a number. When I divide by three and subtract 7, I get zero. What's my number? How do you know?

$\frac{x}{3} - 7 = 0$ $\qquad\qquad$ $x = 21$

*Did you accurately show your work?

12.) 37 + (–20) has the same result as which of the following? Circle all that apply

A. –37 + 20 B. –(37 – 20) C. 37 – 20 D. –37 + (–20) E. None of these.

-17 -17 17 -57

13.) Solve for the variable indicated.

a. $n = 13 + (-28)$ b. $x = (-36) + (-12)$ c. $m = -24 - (24)$ d. $y = 29 - (-18)$

-15 -48 -48 47

14.) Calculate.

a. $4\frac{1}{3}+\frac{3}{4}=$ $5\frac{1}{12}$

b. $6\frac{4}{5}-3\frac{2}{3}=$ $3\frac{2}{15}$

c. $8\frac{1}{4}-3\frac{5}{8}=$ $4\frac{5}{8}$

d. $\frac{1}{3}+\frac{4}{9}=$ $\frac{7}{9}$

15.) Find the value of each expression without using a calculator.

a. $-3 + 12$ 9

b. $-6 - (-12)$ 6

c. $-10 + (-7)$ -17

d. $7 - (-10)$ 17

e. $4 - 10$ -6

f. $-12 - 2$ -14

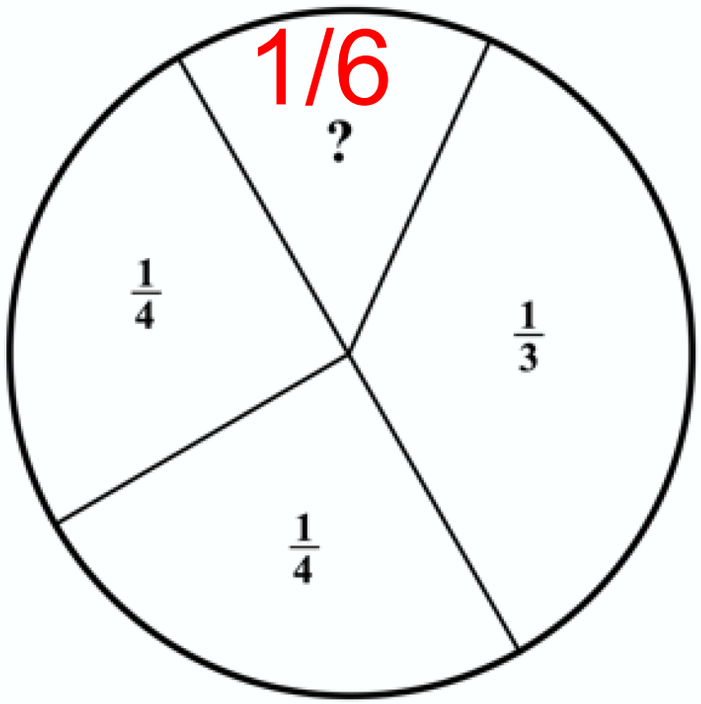
g. $-6(-8)$ 48

h. $12(-5)$ -60

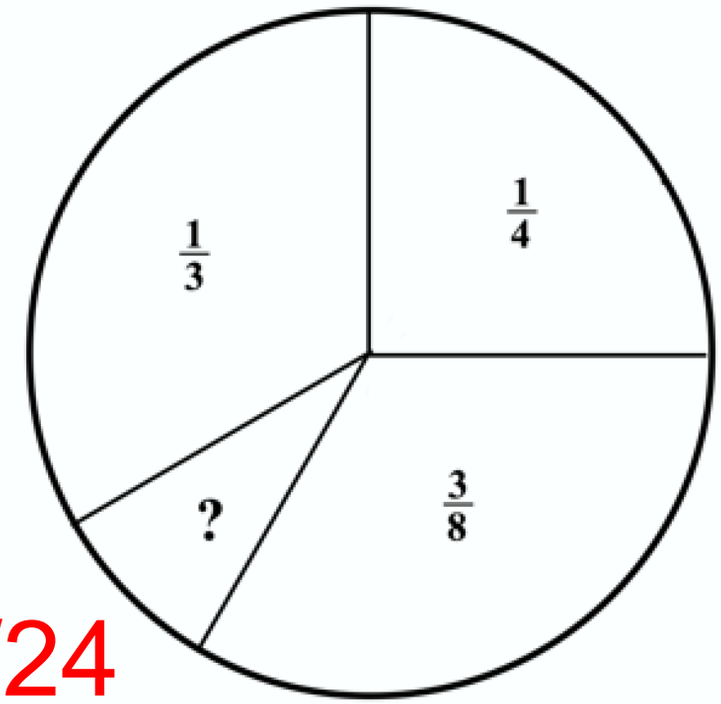
i. $-17 + 6$ -11

16.) The two spinners below are incomplete. If the numbers in the sections of the spinner represent the probabilities of spinning each section, what fraction is missing in each spinner?

a.



b.



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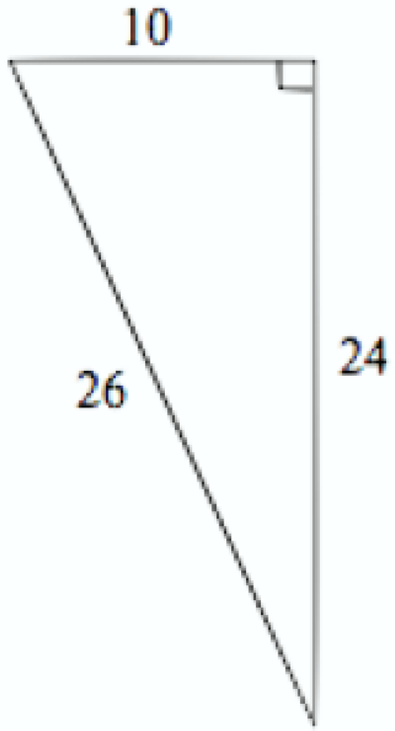
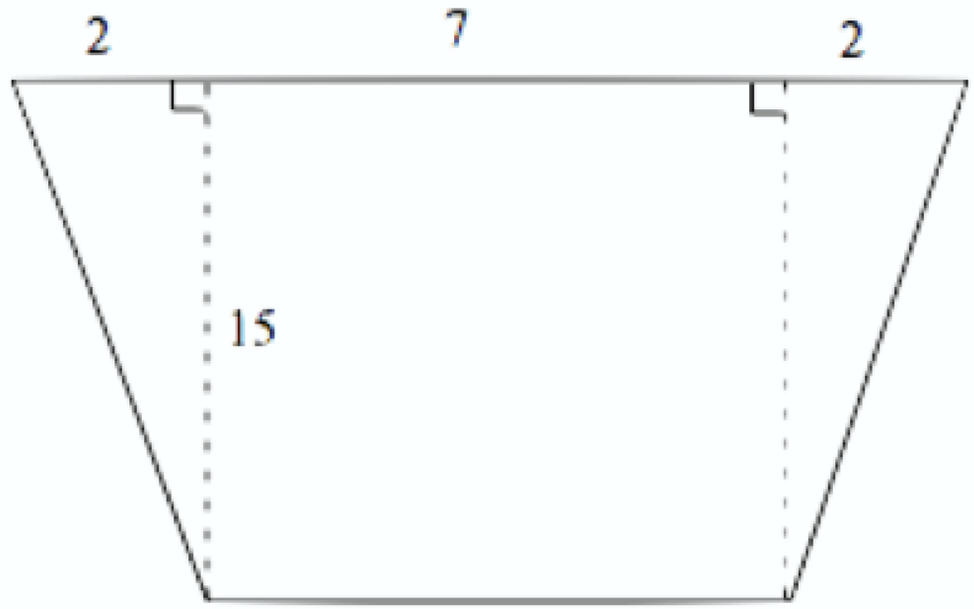
17.) Calculate the area of each shape. Show your work.

a.



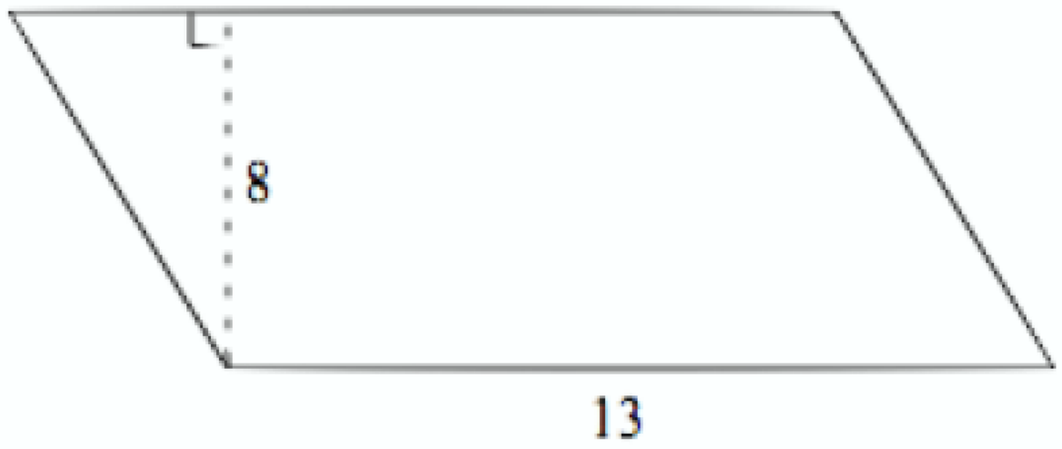
120 sq. units

b.



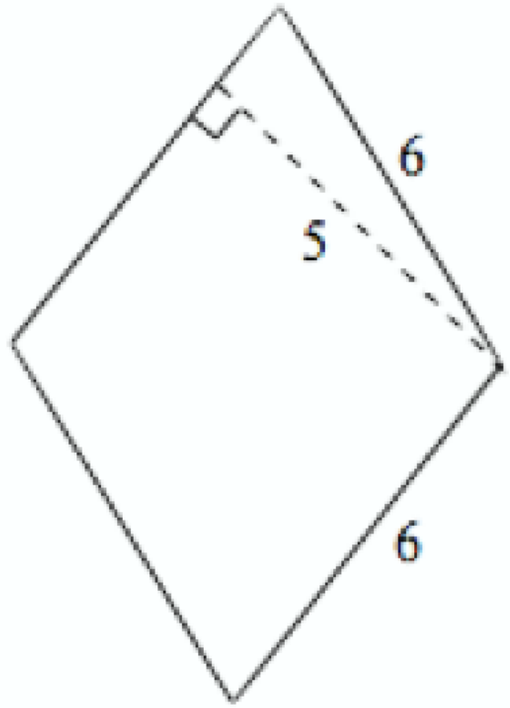
135 sq. units

c.



104 sq. units

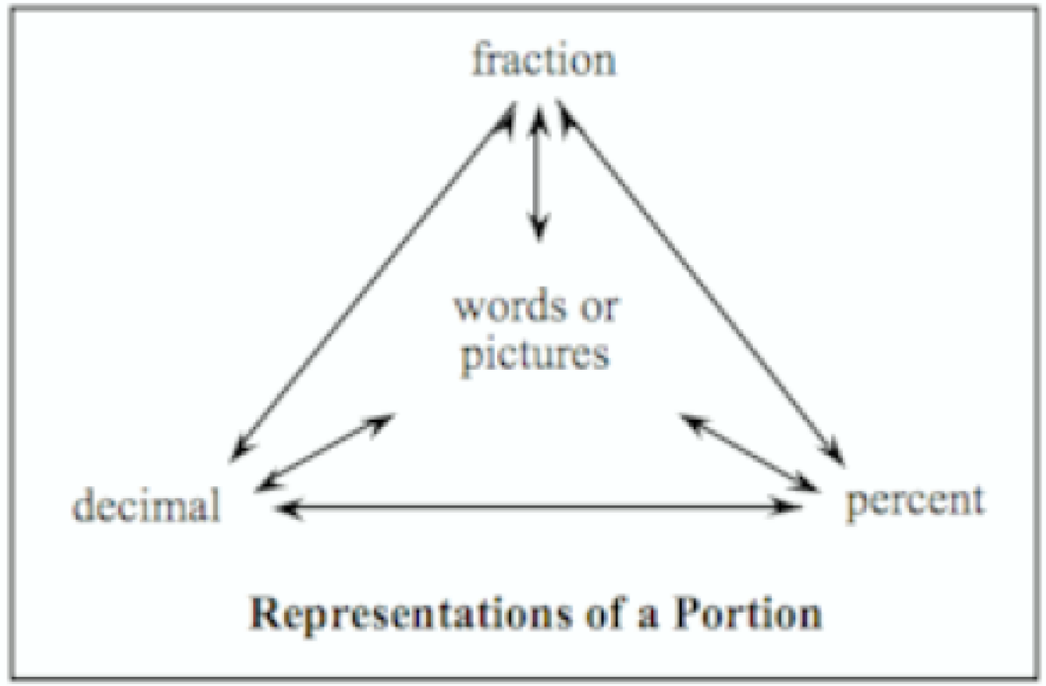
d.



30 sq. units

18.) At right is a Representations of a Portion web. Complete the web to fit the situation represented by this quote from an article:

"*Youth exposure to alcohol advertising on U.S. television increased 71%...*"



$\frac{71}{100}$

seventy one hundredths

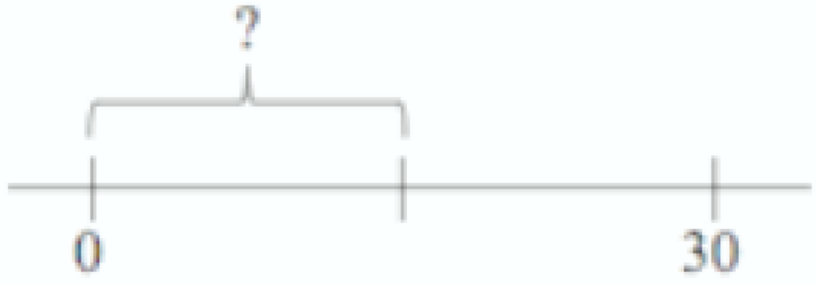
0.71

71%

19.) Find the missing length based on the scale.

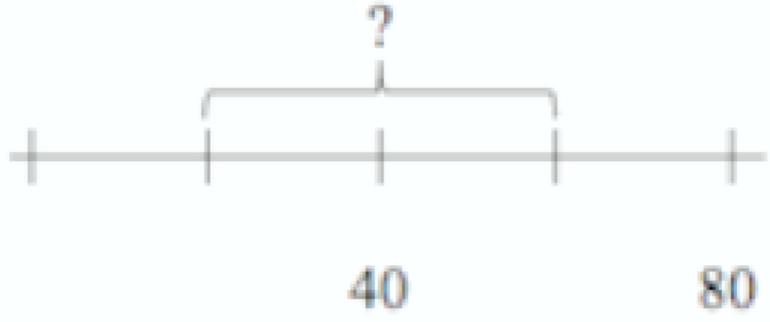
15 units

a.



40 units

b.



20) Mr. Schuster's students just got their exams back. Use the clues below to determine how many students received A's, B's, C's, D's, and F's (where A, B, C, and D are passing grades and F is failing).

- There are 32 students in Mr. Schuster's class and every one of them took the exam.
- Four times as many students received B's than C's.
- One quarter of the students failed the exam. 8
- The fraction of the students who earned A's is equivalent to the fraction of the students who earned C's.
- Three-quarters of the students received either and A, B, or C.

A	B	C	D	F
4	16	4	0	8