Lesson 1.7

Lesson 1-7: Solve Problems with Rational Numbers

I can… solve multistep problems with fractions and decimals.

a.) What do you need to know before you can answer the question?

times cat fed (2)

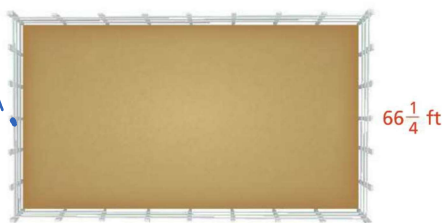b.) How can you determine which operations to use to solve the problem?

mult.

$7\frac{1}{2}$

c.) To find out whether she has enough cat food, Jenna multiples, divides and compares. Explain how Jenna may have solved the problem.

Example 1: Solve Multistep Problems with Fractions

A farmer is building a small horse-riding arena. The fencing around the arena is built using three rows of wood planks. The farmer decided to use wood planks that are $8\frac{1}{2}$ feet long, so he ordered 130 of these wood planks from a local lumberyard. Did he order enough wood planks to build the arena?

$66\frac{1}{4}$ ft

Not enough!

$P = 2 \cdot 120\frac{1}{2} + 2 \cdot 66\frac{1}{4}$

$\frac{2}{1} \cdot \frac{241}{2} + \frac{1}{1} \cdot \frac{265}{4}$

$120\frac{1}{2}$ ft

$\frac{3}{1} \cdot \frac{747}{2} = \frac{2241}{2}$

$\frac{2 \cdot 241}{2 \cdot 1} + \frac{265}{2}$

$\frac{2241}{2} \div \frac{17}{2} \rightarrow \frac{2241}{2} \cdot \frac{2}{17} = \frac{2241}{17}$

Try it! $\frac{482}{2} + \frac{265}{2} = \frac{747}{2}$

$17 \overline{)2241}$ 131
-17
54
-51
31
17

The farmer decided that he ordered enough planks for an arena that measured $115\frac{1}{4}$ ft by $63\frac{1}{2}$ ft. Is he correct? Explain.

Example 2: Solve Multistep Problems with Decimals

A 26.2 mile marathon is being planned. Water stations and medic tents must be placed along the route.

A.) Water stations are being set every 2.62 miles along the marathon route and at the start line. How many water stations are needed?

$26.2 \div 2.62 = 10$

start line

$10 + 1 = \boxed{11}$

B.) There are 5 medic tents equally spaced along the marathon route, including one at the starting line and one at the finish line. Where should the other 3 medic tents be placed?

$26.2 \div 4$

$4 \overline{)26.20}$ 6.55
24
$2 2$
20
$2 0$
$2 0$
$2 0$

6.55
6.55
$\overline{13.10}$
6.55
$\overline{19.65}$

6.55 mile
13.1 mile
19.65 mile
26.2 mile

Try it!

The number of runners who finish the marathon is 320. Runners donate $2.50 for each mile they run. How much money is donated? Explain.

Try it!

The number of runners who finish the marathon is 320. Runners donate $2.50 for each mile they run. How much money is donated? Explain.

KEY CONCEPT

When solving multistep problems with fractions or decimals:

- decide the steps to use to solve the problem.
- choose the correct operations.
- identify the information you need from the problem.
- correctly use the information.
- calculate accurately.
- interpret solutions and check that the answer is reasonable.

Do you understand?

1.) How can you solve problems with rational numbers?

Rate your understanding. 1-Do not understand....4-can teach someone else

Learning Target: multistep problems with rational numbers	
I can do a multistep problem with fractions.	1 2 3 4
I can do a multistep problem with decimals.	1 2 3 4