

Key

Read all directions and follow them carefully. Use back of paper if necessary. Relax, breathe, and good luck. ☺

1. (9 points) Write the following list of numbers in order from smallest to largest. (DO NOT use division, use number sense.)

$$\frac{3}{11}, 0.3, 0.25, 0.\overline{25}, \frac{1}{4}\%, 1.26, 33\%, \frac{1}{3}, \frac{99}{100}$$

1/4% .25 .25 3/11 .3 33% 1/3 99/100 1.26

2. (8 points) Solve the following problems. Make sure to have units on your answers.

- a. On a map, $\frac{1}{3}$ inch represents 18 miles. If two cities are $2\frac{1}{2}$ inches apart on the map, what is the actual distance between them?

$$\frac{1/3}{18} = \frac{2\frac{1}{2}}{x}$$

$$\frac{1}{3}x = 45$$

$$x = 135 \text{ miles}$$

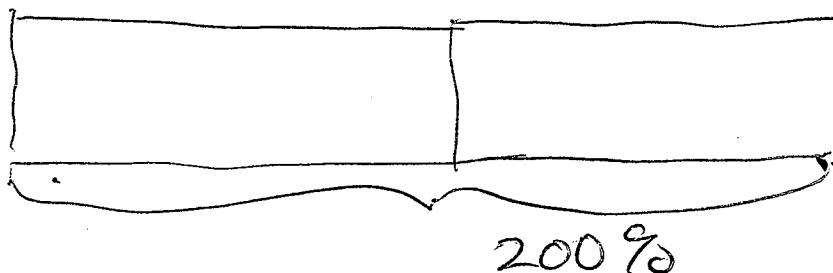
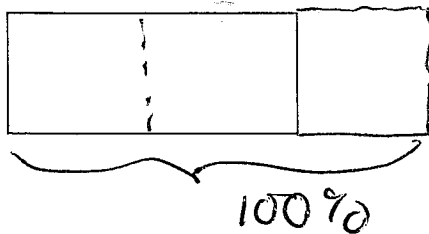
- b. In 3 weeks a horse eats 10 pounds of hay. How much hay will the horse eat in 5 weeks?

$$\frac{3}{10} = \frac{5}{x}$$

$$3x = 50$$

$$x = 16\frac{2}{3} \text{ lbs}$$

3. (4 points) The following rectangle represents $66\frac{2}{3}\%$ of a larger rectangle. Draw 200% of the larger rectangle.



4. (3 points) The number of graduates from Smalltown High changed from 20 to 27. This represents what % increase?

$$\frac{7}{20} = 35\%$$

5. (6 points) A teacher was hired at a salary of \$18,200 and is to receive a raise of 5.5% after her first year and a raise of 4% after her second year. What should her salary be after the 2-year period?

$\begin{array}{r} 18200 \\ \times .055 \\ \hline 91000 \\ 91000 \\ \hline 1001.00 \end{array}$	$\begin{array}{r} 18200 \\ + 1001 \\ \hline 19201 \end{array}$	}	$\begin{array}{r} 19201 \\ \times .04 \\ \hline 768.04 \end{array}$	$\begin{array}{r} 19201 \\ + 768.04 \\ \hline \boxed{19,969.04} \end{array}$
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6. (8 points) Complete the following:

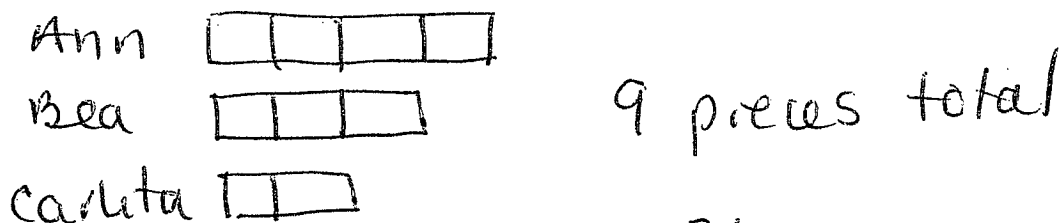
- a. 15% of 240 is 36
- b. 185% of 40 is 74.
- c. 120 is 8 percent of 1500
- d. 50 is 100% more than 25

7. (8 points) Ann split some candy with her younger sisters, Bea and Carlita. Bea and Carlita are upset.

Bea: "I only got $\frac{3}{4}$ as much as you did, Ann!"

Carlita: "And I only got $\frac{1}{2}$ as much as you did, Ann!"

- a. Make a sketch, labeling the children's shares, A(nn), B(ea), and C(arlita).



- b. What part of all the candy did Carlita get? $\frac{2}{9}$

- c. What is the ratio of Ann's share to Bea's share? 4:3

- d. If there were 36 ounces of candy altogether, how many more ounces did Ann get than Carlita got?

$$36 \div 9 = 4 \text{ oz each piece}$$

$$\text{Ann} = 2(4) = 8 \text{ oz. more}$$

8. (8 points) After a trip, a husband says to his wife, "Wife, you drove 60% as far as I did on the trip."

a. Make a sketch of the trip, labeling each persons part of the drive.



b. What part of the whole trip did the husband drive? $\frac{5}{8}$ (62.5%)

c. If the husband drove 120 miles further than his wife did, how long was the whole trip? $60 \times 8 = 480$ miles

9. (8 points) Complete the following:

a. 3.3 cm is 3 times as long as 1.1 cm.

b. 3.3 cm is 2 times longer than 1.1 cm.

c. 36 inches is 150 % as long as 24 inches.

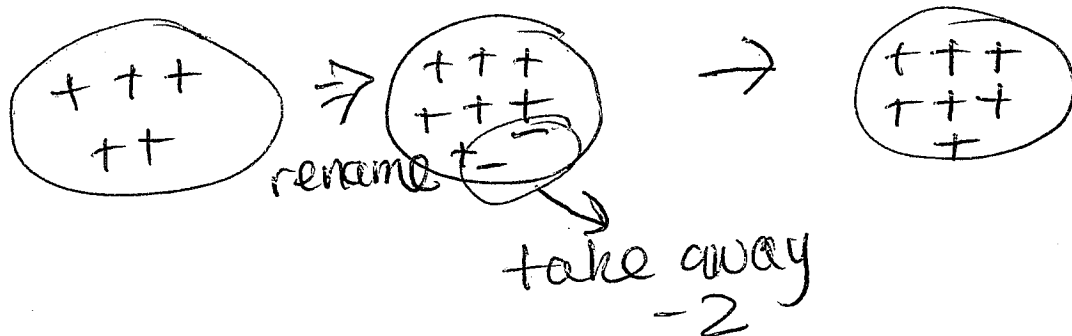
d. 36 inches is 50 % longer than 24 inches.

10. (9 points) Use the colored chip (or use + or - signs) model to illustrate the following. Include the correct answer.

a. $-4 + (-5) =$ -9

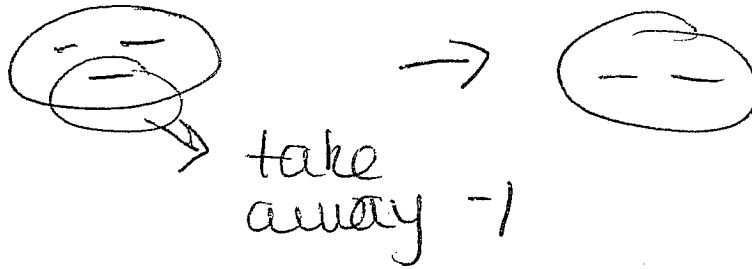


b. $5 - (-2) =$ $+7$

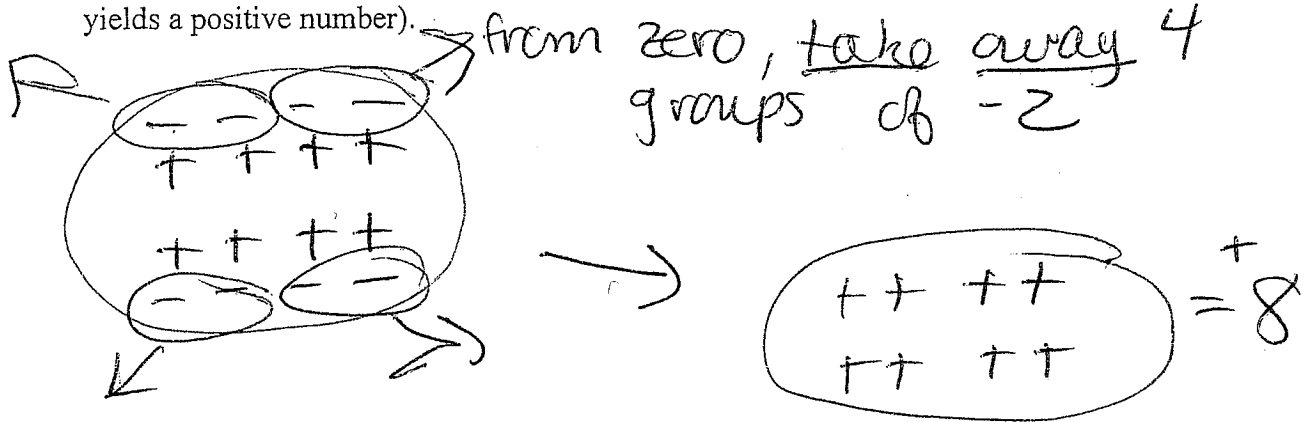


c. $-3 - (-1) = \underline{-2}$

+3



11. (4 points) Show in some way that $-2 \times -4 = 8$ (that a negative times a negative yields a positive number).



12. (4 points) Extra Credit: Two different people make coffee at The Grounds Coffee Shop. They use the same size scoop for coffee.

Monday: Tom used 4 scoops of coffee for 6 cups of water.

Tuesday: Irene used 6 scoops of coffee for 8 cups of water.

On which day is the coffee stronger and why?

MONDAY TUESDAY / SAME ON BOTH

Explain your answer.

M $\frac{4 \text{ scoops}}{6 \text{ water}} = \frac{2}{3} \text{ scoop per water}$

T $\frac{6 \text{ scoops}}{8 \text{ water}} = \frac{3}{4} \text{ scoop per water}$

★ On Tuesday there is more coffee per each water