Welcome!

Take out 79-83, integer notes that you created and your group projects

Pre-Algebra CC2 Names _____
Chapter 2

Chapter 2 Integer Project – 7th Grade

Per. _____

We did	Activity & Description	Point Value for Activity
✓	On a piece of paper, create a set of "class notes" for an absent student and write an explanation of how to ADD and SUBTRACT integers (rules, pictures, strategies, etc…)	10
	A,B,C,D, and E correspond to points on a thermometer. Use these clues to plot the points on this thermometer: • B and D are negative • D is warmer than C • B is warmer than C • E and D are the same distance from zero • E is colder than A Then, create your own thermometer problem and include the Answer/Solution	20
	Create a 4x4 "Magic Square" so each row, column, & diagonal add up to -7.	25
	Design a small poster with an explanation of how to ADD and SUBTRACT integers. Be sure to include examples and answers for each example that you create.	20
	Identify 3 real-life situations where integers could be used to convey information. Create on problem for each of the 3 situations (total of 3 problems). Make sure to include the answers/solutions to each problem.	30

*If you do not physically have something let me know where it is:

it was shared to google classroom _____ shared to just the teacher ✓

emailed to just the teacher _____ brought in on a flash drive_____

it is a live presentation_____

forgotten at home (what it was)_____

other _____

Solve and draw a picture with a number line to represent each expression

1) 3 + (-5)

2) -5 + 7

Find the value of the diagram and write an equation for it.

3) + - + - -

4) + - + + - - -

Evaluate each expression.

5) $(-3) - (-1) + |(-1) + (-8)|$

$-3-(-1)+|-9|$

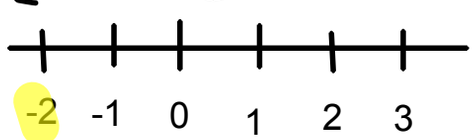
$-3+1+9$

$-2+9=7$

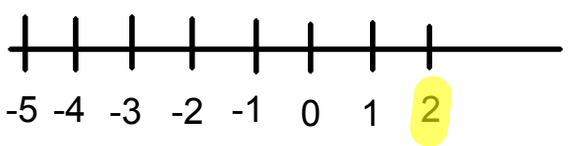
6) $1 - (-1) + 5 - (-1)$

$1+1+5+1=8$

1)



2)



ANSWERS

3) 2 + (-3) = -1

4) 3 + (-4) = -1

5) 7

6) 8

79-83 Homework Answers

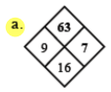
2-79. a) 12 b) 11 c) 6.4 d) 6 e) 15 f) -51

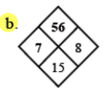
2-80. See below:

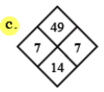
a. $9(400+10) = 3600 + 90 = 3690$

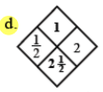
b. $6(500 + 90 + 2) = 3000 + 540 + 12 = 3552$ **or** $6(600 + (-8)) = 3600 + (-48) = 3552$

2-81. See answers in bold in the diamonds below:

a. 

b. 

c. 

d. 

2-82. See below:

a. $\frac{45}{100}$, 45% $\frac{9}{20}$

b. one and twenty-seven hunderedths, 1.27

83) $\frac{1}{8} = 12.5\%$ 22.5 min or 0.375 hr

2-83. Diagrams vary; they should show that $\frac{3}{8} + \frac{4}{8} + \frac{1}{8}$ is equivalent to 3 hours. The "present" portion should show 22.5 minutes or 0.375 hours.

Review & Preview

2-79. Find the value of each of the following expressions. Use a tile diagram or a number line to help you, if you need it.

a. $3(4)$

b. $4 + 11 + (-4)$

c. $3.2(2)$

d. $|(-2) + (-2) + (-2)|$

e. $|2(-7.5)|$

f. $10\frac{1}{3}(-5)$

$\frac{51}{1} \cdot \frac{-5}{1}$ $\frac{15}{1}$ $\frac{1}{1}$ -51

2-80. Use the Distributive Property to rewrite each of the following products as sums, and then calculate the value, as shown in the example below.

Example: $4(307) = 4(300) + 4(7) = 1200 + 28 = 1228$

a. $9(410)$

b. $6(592)$ $6(500) + 6(90) + 6(2)$ $7(105)$

2-81. Copy and complete each of the Diamond Problems below. The pattern used in the Diamond Problems is shown at right.

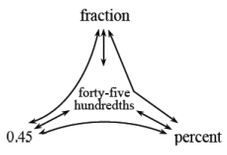
a. 

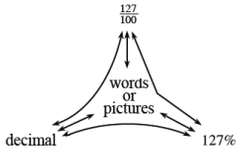
b. 

c. 

d. 

2-82. Copy and complete each of the portions webs below.

a. 

b. 

2-83. Camille had a very fun birthday party with lots of friends and family attending. The party lasted for 3 hours. She and her friends played games for $\frac{3}{8}$ of the time, ate pizza and cake for 50% of the time, and spent the remainder of the time opening presents. Draw a diagram and make calculations to show the amount of time spent opening presents.

180 $\frac{3}{8} + \frac{4}{8} = \frac{7}{8} \rightarrow \frac{1}{8}$

2-84. Jahna measured the heights of the sunflowers growing in her backyard. Here are the heights that she found (in inches): 34, 48, 52, 61, 76, 76, 61, 84, 61, 39, 83, 61, 79, 81, 56, and 88.

a. Find the mean and median of the heights.

b. Create a histogram to represent this data. Your histogram should have four bins, each with a width of 15.

What do I need?

1) Class work notebook

2) Textbook open to page 104

2.2.5 How big is part of a part?

2.2.5 How big is part of a part?

Multiplication of Portions

You have seen how Cecil's repeated integer-sized moves can be represented with addition or multiplication. But what if you need to calculate part of a whole? For example, if 200 people enter a competition and $\frac{1}{4}$ of them are chosen for the final round, how do you calculate how many were chosen? Sometimes you may even need to calculate a part of a part. For example, if Cameron sprinted $\frac{2}{3}$ of the $\frac{1}{4}$-mile track, how would you calculate how far Cameron sprinted? Today you will use different models to help you answer these kinds of questions.

WHAT ARE WE DOING???

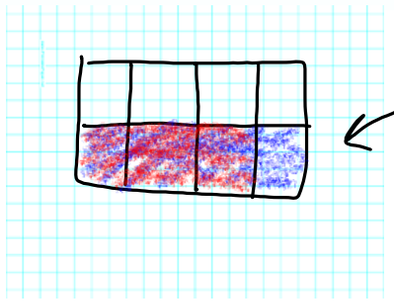
86-88 as a class

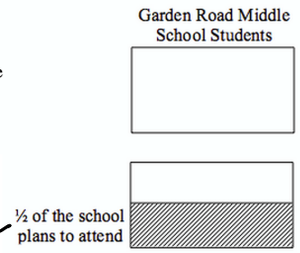
96, 99, 100 with your partner

2-86. Garden Road Middle School is planning a field trip for students to attend a conference about careers in mathematics. Half of the students signed up to go on the field trip, but only three fourths of those students brought back their permission slips to attend the field trip. Explore what fraction of students in the school will be able to go on the field trip.

a. Discuss this problem with your team. Do you have to know how many students go to Garden Road Middle School to be able to answer this question? Why or why not? Once you have reached agreement on this issue, ask your teacher for a Lesson 2.2.5 Resource Page, called "Unit Rectangles," or draw eight identical rectangles on a full sheet of paper. Then follow the steps below to answer the question.

b. The entire school's enrollment—no matter what it is—can be represented with an unshaded unit rectangle, as shown at right. Half of the school plans to attend. To show this, divide your rectangle into two equal pieces, as shown below. Then lightly shade and label one of the halves to show the half of the school that is planning to attend.
Label the other half with an appropriate label.





c. Three fourths of the students planning to attend brought back their permission slips to go to the conference. Represent this portion on your rectangle.

d. What fraction of the whole school will attend the conference?

3/8

e. If the total school population is 120 students, how many would attend?

f. **Additional Challenge:** How do you know that the total school population cannot be either 125 or250?

$\frac{120}{2} = \frac{60}{4} = 15 \cdot 3 = 45$ $\frac{120}{8} = 15 \cdot 3 = 45$

$\frac{15}{1}\frac{120}{} \cdot \frac{3}{\cancel{8}_1} = 45$ $y(8) = 120$

$3y = 45$

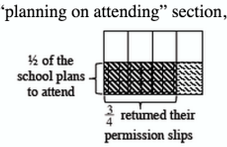
$\frac{3}{8} = \frac{x}{120}$

2-86. See below:

a. No, you do not need to know the number of students to find the portion that will be able to go, only to find the number of students going.

b. "Not attending" is appropriate.

c. Students will likely use vertical lines to cut the original (large) rectangle in fourths, then darkly shade $\frac{3}{4}$ of the "planning on attending" section, as shown below; the darkly shaded region shows "$\frac{3}{4}$ of $\frac{1}{2}$ of the school."



d. $\frac{3}{8}$

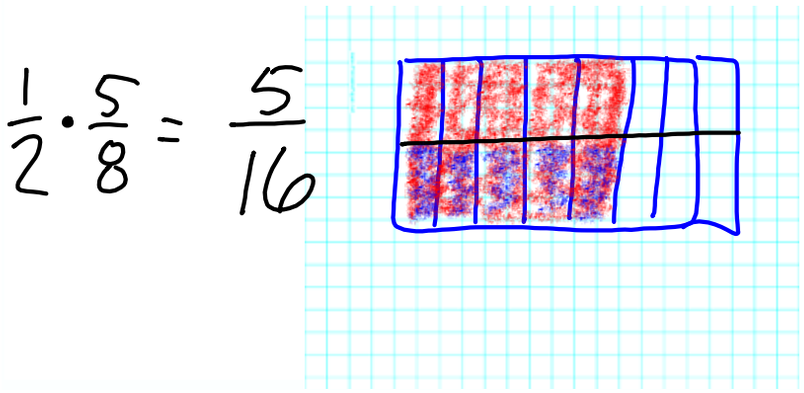
e. 45

f. Neither 125 nor 250 can be divided evenly by 8.

2-87. Howie has $\frac{5}{8}$ of a pizza left over from last night's dinner. He loves pizza and eats half of the remaining pizza the next day for breakfast.

a. Draw your own diagram or use your unit rectangle Lesson 2.2.5 Resource Page to determine what portion of the original pizza Howie ate for breakfast.

b. Write an equation to show $\frac{1}{2}$ of $\frac{5}{8}$.



2-88. Joe Dominguez has decided to plant a rectangular flower garden. Joe loves red carnations. He wants 50% of the garden to be planted with carnations, and one third of the carnations must be red.

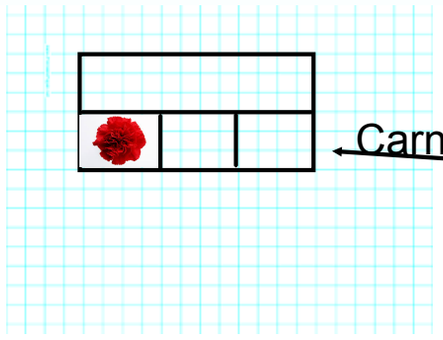
a. On a unit rectangle, label and shade the fraction of the garden that must be carnations.

b. Now label and shade the fraction of the carnations that must be red.

c. What fraction of the whole garden must be red carnations?

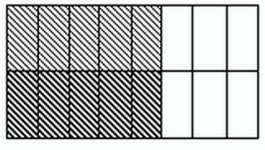
d. What fraction of the garden is not carnations?

e. Express the number of red carnations with a number sentence.



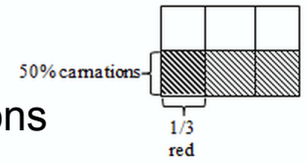
2-87.

a. See possible diagram at right; he ate $\frac{5}{16}$ of the pizza.



b. $\frac{1}{2} \cdot \frac{5}{8} = \frac{5}{16}$

a. See diagram below.



b. See diagram above.

c. $\frac{1}{6}$

d. $\frac{1}{2}$

e. $\frac{1}{3} \cdot \frac{1}{2} = \frac{1}{6}$

2-96. Multiply the follo

a. $\frac{7}{8} \cdot \frac{5}{6}$

b. $\frac{2}{13} \cdot \frac{4}{5}$

c. $\frac{6}{7} \cdot \frac{6}{7}$

d. $\frac{4}{7} \cdot \frac{3}{8}$

e. $\frac{6}{11} \cdot \frac{1}{2}$

f. $\frac{8}{3} \cdot \frac{9}{14}$

2-96. See below:

angles or Audrey's method.

a. $\frac{35}{48}$

b. $\frac{8}{65}$

c. $\frac{36}{49}$

d. $\frac{12}{56} = \frac{3}{14}$

e. $\frac{6}{22} = \frac{3}{11}$

f. $\frac{72}{42} = \frac{12}{7} = 1\frac{5}{7}$

2-99. CHANGE CAN BE GOOD

As Jonique was working in class, she had to do the problem $2\frac{1}{2}\cdot 3\frac{1}{4}$. She did not want to draw rectangles. However, she thinks that she has figured out a shortcut for multiplying mixed numbers.

"I know how to change mixed numbers into fractions. That will make the problem much easier," she boasted.

Look at Jonique's work shown at right.

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

$\frac{5}{2}\cdot\frac{13}{4}$

$\frac{65}{8}$

$8\frac{1}{8}$

Try Jonique's shortcut on the following problems. Show each step.

a. $3\frac{1}{2}\cdot 1\frac{1}{2}$

b. $1\frac{1}{3}\cdot 2\frac{1}{2}$

c. $1\frac{1}{3}\cdot 3\frac{1}{3}$

d. Compare part (a) with the generic rectangle method in problem 2-97. Which method do you prefer? Why?

2-99. See below:

a. $\frac{21}{4} = 5\frac{1}{4}$

b. $\frac{20}{6} = 3\frac{1}{3}$

c. $4\frac{4}{9}$

d. Answers should be the same. Preferences vary.
Probably not rectangles

2-100. Have you heard people say, "You can't mix apples and oranges?" Anyone who has made fruit salad might disagree. However, you do have to pay attention to what a number represents when you are using it to solve a problem. To add or multiply two quantities, you may need to convert not only the numbers to some other form (like fractions to decimals), but also the quantities they represent.

For example, to add $\frac{1}{2}$ foot to 3 inches, you need to first convert them to the same units, either feet or inches. You could change $\frac{1}{2}$ foot to 6 inches and then add it to 3 inches to get 9 inches. On the other hand, you could change 3 inches to $\frac{1}{4}$ foot and then add it to $\frac{1}{2}$ foot to get $\frac{3}{4}$ foot.

Complete the specified operations for the following quantities, making sure that you are working with like parts, that is, the same units of measure. Each answer can be expressed with one number, although there are multiple ways to represent each one. Be sure you label your answer.

a. $2\frac{1}{2}$ feet + 8 inches

b. $\frac{3}{8}$ of a day + $\frac{1}{2}$ of a day + 6 hours

c. 12.5 meters + 14 kilometers

d. Cecil performing a routine three times that consists of a 5-foot leap and a 3−yard skip. That is, 3(5 feet + 3 yards).

2 · 1/2 feet
↓
24 + 6 = 30 in

.012.5 km

KHDUDCM
n
i
+

2-100. See below:

a. 3 feet 2 inches or $3\frac{1}{6}$ feet or 38 inches

b. 27 hours or $1\frac{1}{8}$ days

c. 14,012.5 m or 14.0125 km

d. 42 feet or 14 yards

What's the difference between an equation and expression?

equation

equal sign

$3x+7=12$

$5+(-7)=-2$

expression

made up of terms

No equal sign

$3x+7$

$5+(-7)$

Multiplying Fractions

Step 1: Convert all mixed to improper

Step 2: Check for cross canceling

Step 3: Multiply STRAIGHT across

Step 4: Simplify the answer (turn into mixed number and make sure it is reduced)

Ex. $4\frac{2}{3} \cdot \frac{9}{28}$

$\frac{{}^{2}\cancel{14}}{\cancel{3}_{1}} \cdot \frac{\cancel{9}^{3}}{\cancel{28}_{4}} = \frac{6}{4} = 1\frac{2}{4} = \boxed{1\frac{1}{2}}$

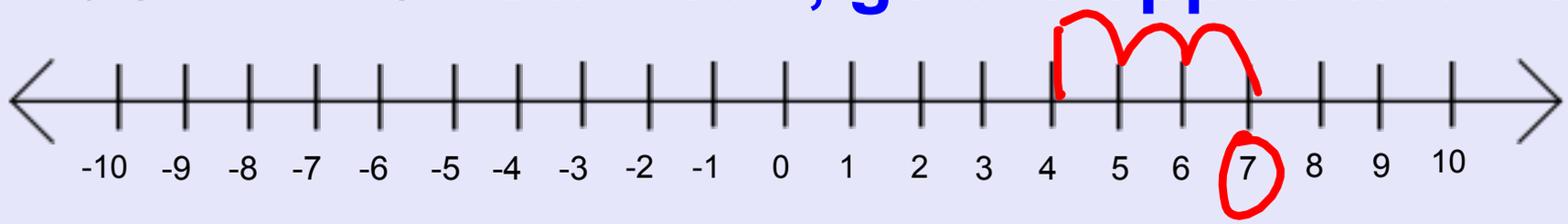
you try: $1\frac{2}{5} \cdot 8\frac{1}{3}$

$\frac{7}{\cancel{5}_{1}} \cdot \frac{\cancel{25}^{5}}{3} = \frac{35}{3} = \boxed{11\frac{2}{3}}$

Subtracting a negative

4 - (-3)

Number Line: Start at 4, go the opposite of left 3



+ -

Draw it out: + + + + + +

Rules: When two negative signs are next to each other, connect to make a GIANT plus sign


Q
U
Z
i


SLOW AND STEADY

Homework

92-94, 101-105

Study for group test

*Start to study for the test. Check out the parent guide on the textbook's website!

Solve and draw a picture with a number line to represent each expression

1) -3 + 5

2) 5 + (-7)

Find the value of the diagram and write an equation for it.

3) + - + - -

4) + + - + - - -

Evaluate each expression.

5) $(-3) - (-1) + \left|(-1) + (-8)\right|$

6) $1 - (-1) + 5 - (-1)$

Write an equation, then solve

1) Julia sold half of her comic books and then bought thirteen more. She now has 40. With how many did she begin?

54

$\frac{c}{2} + 13 = 40$

2) Ndiba sold half of his comic books and then bought nineteen more. He now has 47. With how many did he begin?

56

$\frac{c}{2} + 19 = 47$

Solve each equation.

3) $\frac{n}{9} + 6 = 5$ {−9}

4) $-6n + 1 = 85$ {−14}

Evaluate each expression.

5) $(-3) - (-1) + |(-1) + (-8)| = 7$

8

6) $1 - (-1) + 5 - (-1)$

Write an equation, then solve

1) Julia sold half of her comic books and then bought thirteen more. She now has 40. With how many did she begin?

2) Ndiba sold half of his comic books and then bought nineteen more. He now has 47. With how many did he begin?

Solve each equation.

3) $\frac{n}{9} + 6 = 5$

4) $-6n + 1 = 85$

Evaluate each expression.

5) $(-3) - (-1) + \left|(-1) + (-8)\right|$

6) $1 - (-1) + 5 - (-1)$