

Accelerated 1

Summer Enrichment Packet

Rising Accelerated 1 Students

ANSWER KEY



PRINCE GEORGE'S COUNTY PUBLIC SCHOOLS

Division of Academics

Department of Curriculum and Instruction

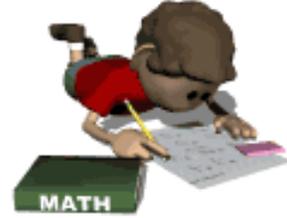


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Note to the Student

You learned so much in Grade 5! It is important that you keep practicing your math skills over the summer to be ready for your Accelerated 1 math class. In this packet, you will find weekly activities for the summer break.



Directions:

- Create a personal and fun math journal by stapling several pieces of paper together or use a notebook or binder with paper. Be creative and decorate the cover to show math you see in your world.
- Each journal entry should:
 - ❖ Have the week number and the problem number.
 - ❖ Have a clear and complete answer that explains your thinking.
 - ❖ Be neat and organized.
- *Pay attention to the gray boxes that you see at the beginning of each week's activities. Those boxes indicate the Common Core domain and standard that the*

subsequent activities address. If you see a NON-CALCULATOR SYMBOL  next to a gray box, then do not use a calculator for the activities in that section!

Playing board games and card games are a good way to reinforce basic computation skills and mathematical reasoning. Try to play board and card games at least once a week. Some suggested games to play are: Chess, War, Battleship, Mancala, Dominoes, Phase 10, Yahtzee, 24 Challenge, Sudoku, KenKen, Connect Four and Risk.

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Where to Go to Get Help ... or Practice!

During the course of your math work this summer, you may need some assistance with deepening your understanding the skills and concepts. You also might want to get some more practice. Here are some sites you can visit online:



To get the exact definition of each standard, go to www.corestandards.org and search for the content standard (for example, *7.NS.1a*).



Khan Academy has helpful videos and self-guided practice problems for every grade level. Go to www.khanacademy.org to get started.

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WEEKS 1 & 2 || Number & Operations – Fractions Standards 5.NF.1-5.NF.2 :

Use equivalent fractions as a strategy to add and subtract fractions.

- Need some help with these skills? Click [HERE](#) or [HERE](#) for a link to video lessons.



1.) Kyle incorrectly added the fractions $\frac{2}{3}$, $\frac{1}{2}$, and $\frac{5}{12}$. He said that to add fractions with different denominators, you use the common denominator and add the numerators. Kyle's work is shown in the box below.

$$\frac{2}{3} + \frac{1}{2} + \frac{5}{12}$$

$$\frac{2+1+5}{12}$$

$$\frac{8}{12}$$

- What is Kyle's mistake?
- Find the correct value of $\frac{2}{3} + \frac{1}{2} + \frac{5}{12}$
- Show your work and explain your answer in the box below.

Sample Answer:

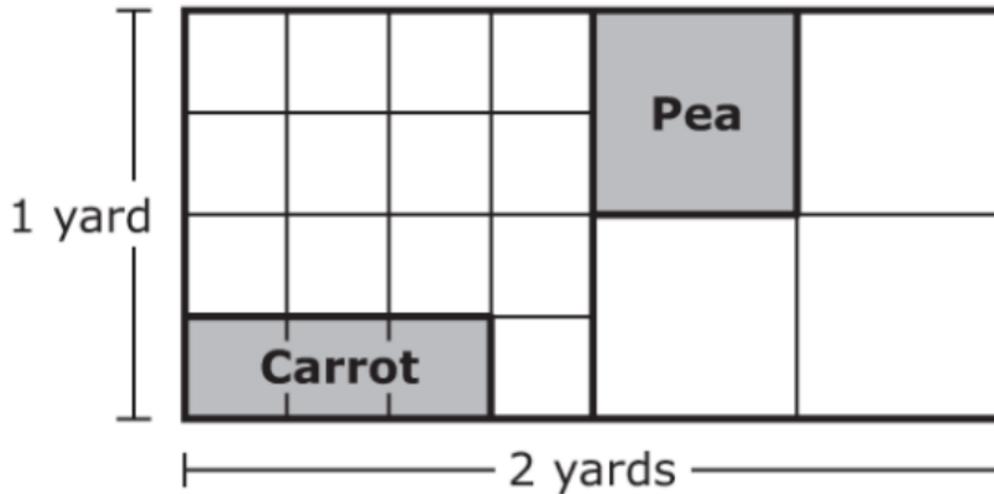
Kyle's mistake is that he chose the common denominator of 12 but did not convert $\frac{2}{3}$ and $\frac{1}{2}$ to equivalent fractions with a denominator of 12.

He should have found that $\frac{2}{3} = \frac{8}{12}$ and $\frac{1}{2} = \frac{6}{12}$. So $\frac{8}{12} + \frac{6}{12} + \frac{5}{12} = \frac{19}{12}$, or $1\frac{7}{12}$

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2.) Joshua planted carrots and peas in his garden.



Use the model to determine how much larger the pea section of the garden is than the carrot section of the garden. Show your work and explain your answer in the box below.

Sample Answer:

The pea section has one shaded part out of four total. If I cut the parts on the right side into the same-size pieces as those on the left, the peas would represent 4 parts out of 16. This makes sense because

$$\frac{1}{4} = \frac{4}{16}$$

On the left side, the carrots take up 3 parts out of the 16 on that side, or $\frac{3}{16}$.

$\frac{4}{16} \div \frac{3}{16} = 1\frac{1}{3}$, so the pea section is $1\frac{1}{3}$ times larger than the carrot section.

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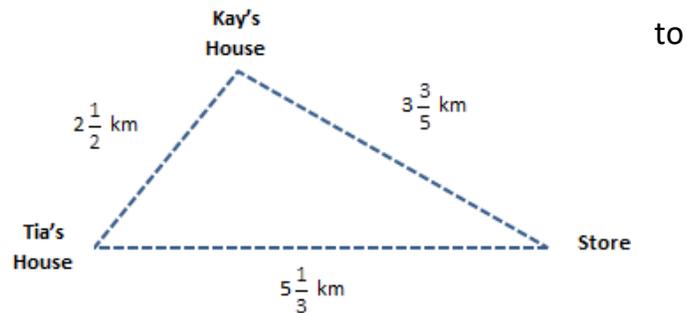
3) Krissy swam $\frac{2}{3}$ of a mile on Monday and $\frac{3}{4}$ of a mile on Wednesday.

- How many miles did she swim over the two days?
- If she wants to swim a total of 3 miles before Friday, how much farther does she need to swim?



Krissy swam $1\frac{5}{12}$ miles over the two days. If she wants to swim 3 miles, she still needs to swim $3 - 1\frac{5}{12}$ miles, or $1\frac{7}{12}$ miles.

4) From her house, Tia biked to the store and then her friend Kay's house before returning home, as shown in the diagram to the right. How many total kilometers did Tia bike?



Tia biked $2\frac{1}{2} + 3\frac{3}{5} + 5\frac{1}{3}$, or $11\frac{13}{30}$ total km.

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WEEKS 3 & 4 || Number & Operations – Fractions Standards 5.NF.4 and 5.NF.6 : Use equivalent fractions as a strategy to add and subtract fractions.

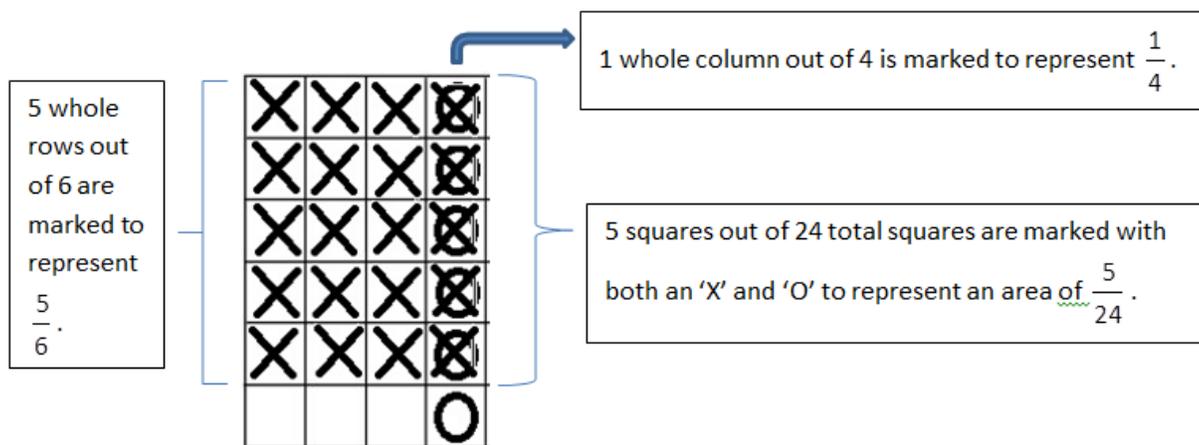
- *Need some help with these skills? Click [HERE](#) or [HERE](#) for links to video lessons for 5.NF.4 or click [HERE](#) for video lessons for 5.NF.6.*



One way to visualize multiplying two fractions is to draw a rectangle model that is made of side lengths that are equal to each of the fractions.

Example: What is the area of a rectangle with side measurements of $\frac{1}{4}$ and $\frac{5}{6}$?

You should know that to find area of a rectangle, multiply the length times the width. To model this, you can create a rectangular grid on which you can represent each side length. Then you can shade the area of the rectangle to represent the expression and confirm your answer by multiplying the fractions.



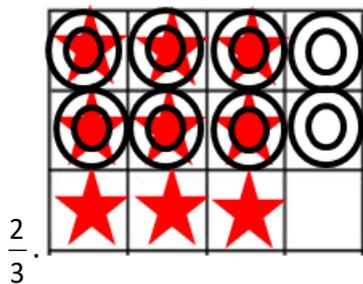
So to find the area of a rectangle with side lengths of $\frac{1}{4}$ and $\frac{5}{6}$, multiply

numerators straight across and denominators straight across: $\frac{1}{4} \times \frac{5}{6} = \frac{5}{24}$.

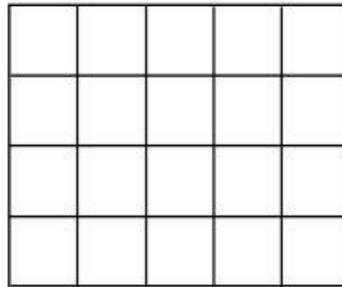
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1) Shade the figure and determine the area of a rectangle with side lengths of $\frac{3}{4}$ and $\frac{2}{3}$.

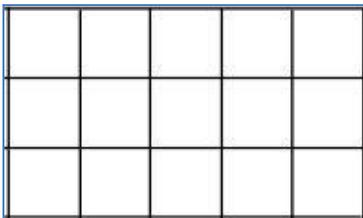


2) Shade the figure and determine the area of a rectangle with side lengths of $\frac{2}{4}$ and $\frac{2}{5}$.



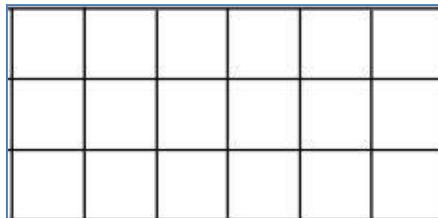
$$\frac{4}{20} = \frac{1}{5}$$

3) Shade the figure and determine the area of a rectangle with side lengths of $\frac{1}{3}$ and $\frac{4}{5}$.



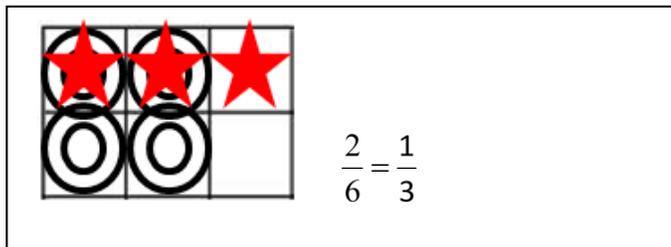
$$\frac{4}{15}$$

4) Shade the figure and determine the area of a rectangle with side lengths of $\frac{1}{6}$ and $\frac{2}{3}$.



$$\frac{2}{18} = \frac{1}{9}$$

5) In the space below, model the expression $\frac{2}{3} \times \frac{1}{2}$ using the examples above as a guide. Then check using math.



$$\frac{2}{6} = \frac{1}{3}$$

6) Aretha's trip to an art supply store took $1\frac{1}{6}$ hours. Her return trip took only $\frac{5}{7}$ of the time of her trip to the store. How long was Aretha's return trip? What was Aretha's total driving time?

$$1\frac{1}{6} \rightarrow \frac{7}{6} \times \frac{5}{7} = \frac{5}{6} \text{ of an hour on her return trip.}$$

$$\frac{5}{6} + \frac{7}{6} = \frac{12}{6} = 2 \text{ hours of total driving time.}$$

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7) Marcus has 36 markers in his case. Of those, $\frac{4}{9}$ are fabric markers.

How many of his markers are not fabric markers? Explain how you determined your answer.

$36 \times \frac{4}{9} = 16$ markers are fabric markers, so $36 - 16 = 20$ are not fabric markers.

5.NF.6

1) You use $\frac{7}{8}$ of a gallon of paint to cover the walls in one room.

How much paint do you need to paint four rooms of the same size?



$\frac{7}{8} \times 4 = 3\frac{1}{2}$ gallons will be needed to paint four rooms.

2) One paving stone weighs $21\frac{5}{12}$ pounds. You want to put six paving stones in front of your house.

How many total pounds of stones do you have to buy?

$21\frac{5}{12} \times 6 = 128\frac{1}{2}$ pounds of stones are needed.

3) A landscaper charges \$16 per hour for his services. How much money do you have to pay him if he works $7\frac{3}{4}$ hours fixing up your yard?



$16 \times 7\frac{3}{4} = 124$. The landscaper should be paid \$124 for his work.

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4) You bought a 70-pound bag of grass seed and used $\frac{2}{5}$ of it to seed your lawn.

How many pounds of grass seed did you use?

$$\frac{2}{5} \times 70 = 28 \text{ pounds of grass seed were used.}$$

5) You decided to paint the walls of your room. You painted half of one wall red. Then you changed your mind and wanted to paint over it in green. You waited for it to dry and then started covering the



red with green paint. At the end of the day, $\frac{2}{3}$ of the original red wall was painted green. At that time, how much of the entire wall had been painted green? Explain how you determined your answer. (*Hint: Draw a picture to help you understand the problem and the solution.*)

$$\frac{1}{2} \times \frac{2}{3} = \frac{1}{3} \text{ of the entire wall is now painted green.}$$

6) Write a short real-life scenario that models the equation below and draw a visual representation to show the solution.

$$4 \times \frac{3}{4} = \text{Answers will vary.}$$

Sample: You want to find the area of a plank. The length is 4 ft and the width is $\frac{3}{4}$ ft. The area is 3 ft².

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Your class is going to plant vegetables in a section of the local community garden. The garden manager has provided an area to plant the vegetables as follows:



The total area for the class to plant vegetables will be a rectangle 40 feet long and 30 feet wide.

The class has decided to plant four rectangular sections of the class garden with vegetables according to this plan:

- $\frac{1}{4}$ of the garden will be planted with carrots.
- $\frac{1}{6}$ of the garden will be planted with potatoes.
- $\frac{1}{8}$ of the garden will be planted with broccoli.
- $\frac{1}{12}$ of the garden will be planted with corn.

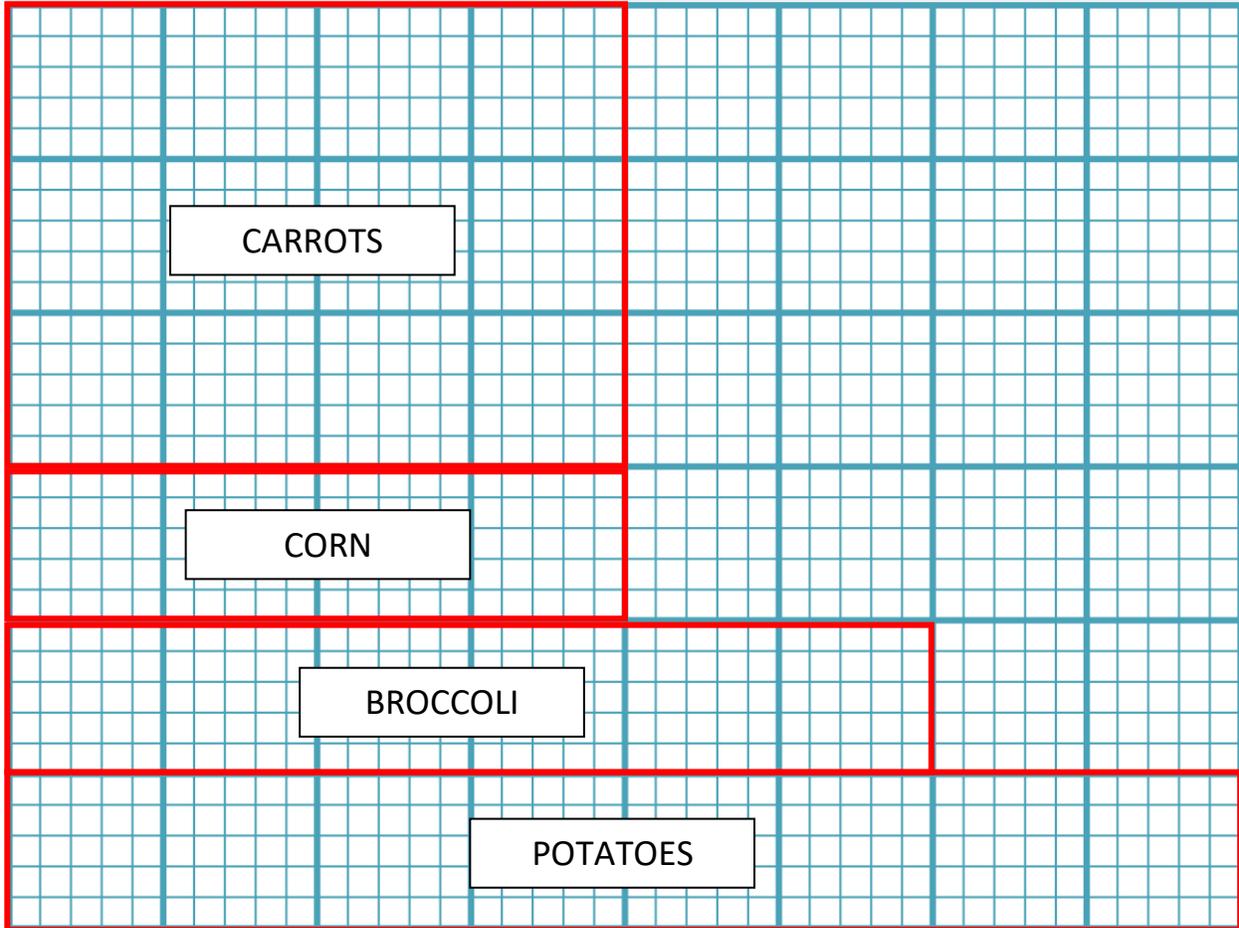
Draw rectangles on the model of the garden to represent the four rectangular sections for planting vegetables according to the class plan. This garden model is divided into 5 feet by 5 feet sections.

- Each square on the model represents 1 square foot.
- Use whole number side lengths.
- Label each section that you create.

The arrangement of the areas may vary.

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2. Think about the class plan for the garden plot. What fraction of the garden plot will be left over after the class plants their vegetables? Show the entire process you followed to determine your answer.

Sample answer: After the class planted the vegetables, there will be $\frac{3}{8}$ of the garden plot left over.

$$\frac{1}{4} + \frac{1}{6} + \frac{1}{8} + \frac{1}{12} = \frac{15}{24} \quad \text{and} \quad 1 - \frac{15}{24} = \frac{9}{24} \cdot \frac{9}{24} \text{ simplifies to } \frac{3}{8}$$

3. Your class has decided to plant potatoes in the unused portion of the garden plot.

Part A

What total fraction of the class garden will now be planted with potatoes? Remember that $\frac{1}{6}$ of the garden is already planned for potatoes. Show the process you used to determine

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your answer.

Sample answer: $\frac{1}{6} + \frac{3}{8} = \frac{4}{24} + \frac{9}{24} = \frac{13}{24}$ So if the remainder of the garden was planted with potatoes, then $\frac{13}{24}$ of the total garden would then be potatoes.

Part B

How many total square feet of the class garden plot will be planted with potatoes? Explain how you determined your answer.

Sample answer: The total square footage of the garden is $40 \times 30 = 1,200$ feet.

For the total square feet of the garden plot that is just planted with potatoes, multiply $\frac{13}{24}$ by 1,200. $\frac{13}{24} \times \frac{1200}{1} = \frac{15600}{24} = 650$ square feet

4. Using the new plan with more potatoes, write an equation to show that the **total area** of the class's garden is used to grow vegetables. Make sure the equation shows that the sum of the areas, in square feet, of each section equals the total area of the class's garden.

$$\frac{1}{4} + \frac{1}{8} + \frac{1}{12} = \frac{11}{24} \quad \text{and} \quad \frac{11}{24} + \frac{13}{24} = \frac{24}{24}, \text{ or } 1 \text{ whole.}$$

In square feet, $300 + 150 + 100 + 650 = 1,200$ square feet

WEEK 5 || Number & Operations – Fractions Standard 5.NF.7: Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

• Need some help with these skills? Click [HERE](#) or [HERE](#) for a link to video lessons.



How Many Cookies?

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To make 1 dozen cookies, you need $\frac{1}{3}$ cup of sugar. You have 4 cups of sugar. You have plenty of all of the other ingredients.



Part A

How many dozens of cookies can you make with the 4 cups of sugar? Draw a model of the quantities in the problem and write an equation that matches it.



There are 12 thirds in 4 wholes, so $4 \div \frac{1}{3} = 12$. So I would be able to make 12 dozen cookies.

Part B

Write your own word problem to go along with the phrase "5 divided by $\frac{1}{2}$ "

Answers will vary.

Carla had 5 candy bars and wanted to give a half a candy bar to as many friends as she could. How many friends could get a half of a candy bar?

Part C:

Solve your problem by drawing a visual fraction model and writing an equation.



$5 \div \frac{1}{2} = 10$ Carla would be able to give half of a candy bar to 10 friends.

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How Many Beads?

In making a necklace, Kia puts a bead on the string every $\frac{1}{6}$ of a foot. (The necklace does not start with a bead.)



How many beads will Kia use if she makes a necklace that is:

1 foot long? 2 feet long? 3 feet long?

Part A

In order to find your answers, create a model (picture) of the situation and write an equation to find the number of beads in each necklace.

1 foot long = 6 beads

2 feet long = 12 beads

3 feet long = 18 beads

Part B

What relationship do you notice between the three answers that you found?

I notice that all of the numbers of beads are multiples of 6.

Part C

If Kia only had 24 beads, what is the longest necklace that she could make? Explain how you determined your answer.

She could make a necklace that is 4 feet long. If she uses 6 beads in a necklace that is 1 foot long, then $1 \times 4 = 4$ feet and $6 \times 4 = 24$ beads

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WEEK 6 || ACCELERATED 1 UNIT 1 PREVIEW – Number System Standard

6.NS.4: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.

Need some help with these skills? Click [HERE](#) and [HERE](#) for links to video lessons.



Finding the Least Common Multiple

Strategy: To find the Least Common Multiple (LCM) of two numbers, simply find the multiples of each of the numbers. Then determine the lowest multiple that is shared by both numbers.

For example: Find the LCM of 4 and 9.

Multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, **36**

Multiples of 9: 9, 18, 27, **36**

The LCM of 4 and 9 is 36.

You can find the LCM of three numbers using the same method.

Try these exercises:

1) What is the LCM of 6 and 9?

18

2) What is the LCM of 6 and 10?

30

3) What is the LCM of 8 and 12?

24

4) What is the LCM of 5 and 8?

40

5) What is the LCM of 4, 6, and 9?

36

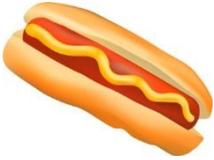
6) What is the LCM of 4, 5, and 6?

60

**LEAST
COMMON
MULTIPLE**

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7) Hot dogs come in packages of 10 and hot dog buns come in packages of 8. What is the least amount of each product that you need to buy if you want exactly one hot dog for each hot dog bun?



You would have to buy 4 packages of hot dogs and 5 packages of buns in order to have 40 of each.

8) A pro baseball team is having a promotion in which every 10th fan that enters the stadium gets a free hat and every 12th person gets a free t-shirt. How many fans will come into the stadium before a fan receives both a hat and a t-shirt?



60 fans will come in to the stadium because 60 is the LCM of 10 and 12.

9) Brandon is thinking of a number that is divisible by 6 and 8. What is the smallest number that Brandon could be thinking of?

24 is the smallest number Brandon could be thinking of because it is the LCM of 6 and 8.

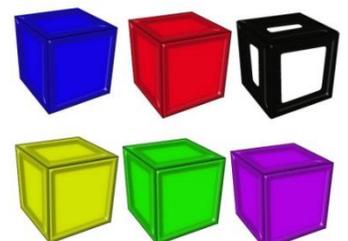


10) The school band is playing a piece of music in which the bass drum is struck every four beats and the chimes are struck every 22 beats. What is the number of the first beat in which the bass drum and chimes will be struck on the same beat?



On the 44th beat, because 44 is the LCM of 4 and 22.

Greatest Common Factor – Example 1



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Brenda has 54 marbles and 72 cubes to put into bags. She wants each bag to have the same number of each item with nothing left over. What is the greatest number of bags Brenda could make? How many of each item would there be in each bag?

To determine the GREATEST number of bags Brenda could make, you could find the **greatest common factor** of the number of marbles (54) and cubes (72). This can be done by listing the possibilities in a table.

Number of Bags	1	2	3	6	9	18	27	54
Marbles in each bag	54	27	18	9	6	3	2	1

# of Bags	1	2	3	4	6	8	9	12	18	24	36	72
Cubes in each bag	72	36	24	18	12	9	8	6	4	3	2	1

- The greatest number of bags that is found in **both** tables is 18, so 18 is the greatest number of bags Brenda could make. Therefore, 18 is the **greatest common factor** for 54 and 72.
- In each bag, there would be 3 marbles and 4 cubes.

Example 2

greatest common factor of 12 and 30.

Strategy: List the factors of each number.
the greatest factor that both numbers have.

12: 1, 2, 3, 4, **6**, 12

30: 1, 2, 3, 5, **6**, 10, 15, 30

So the greatest common factor of 12 and 30 is 6.

Find the
GREATEST
Identify
COMMON
FACTOR

1) Barbara is having a party and wants to pre-make plates of snacks for her guests. She has 90 pretzels and 63 cookies. What is the greatest number of plates she can make with the same amount of pretzels and cookies on each plate and no snacks



2) A farmer is putting apples and oranges into boxes to sell at a market. He has 64 apples and 24 oranges. What is the greatest number of boxes he can make using all of the apples and oranges if each box has identical contents?

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left over? How many of each item would there be?

Barbara can make 9 plates. On each plate there would be 10 pretzels and 7 cookies.



The farmer can make 8 boxes. Each box would have 8 apples and 3 oranges.

3) Melody is making cups of fruit salad. She has 25 grapes, 15 strawberries and 50 blueberries.



How many cups of fruit salad can Melody make if each cup has to have the same amount of each type of fruit and there is nothing left over?

Melody can make 5 cups. Each one would have 5 grapes, 3 strawberries and 10 blueberries.



4) Toni is making party bags for her daughter's birthday party. Toni bought 36 party favors, 27 cookies and 18 lollipops. How many party bags can Toni make if she wants to use all of the materials that she bought and every bag contains the same items?

Toni can make 9 bags with 4 party favors, 3 cookies and 2 lollipops in each one.

The **greatest common factor** can be used to re-write an expression.

For example:

Re-write the expression $44 + 28$ as a product using the greatest common factor as a factor multiplying a quantity in parentheses.

- Think: what is the greatest common factor of 44 and 28?
 - Factors of 44: 1, 2, **4**, 11, 22, 44

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- Factors of 28: 1, 2, **4**, 7, 14, 28
→ The greatest common factor of the two numbers is 4.
- Divide both numbers by the GCF.
 - $44 \div 4 = 11$ and $28 \div 4 = 7$
- Use the GCF as a factor multiplying a quantity in parentheses:
 - $4(11 + 7)$

Check:

- $44 + 28 = 72$
- Apply the Distributive Property to check:
 $4(11 + 7) \rightarrow 4(18) = 72$

Write the following sums as products using the greatest common factor as a factor multiplying a quantity in parentheses, as in the example above.

5) $14 + 18$ $2(7 + 9)$

6) $6 + 42$ $6(1 + 7)$

7) $39 + 18$ $3(13 + 6)$

8) $24 + 40$ $8(3 + 5)$

9) $27 + 15$ $3(9 + 5)$

10) $35 + 49$ $7(5 + 7)$

11) $60 + 48$
 $12(5 + 4)$
_____ 12

WEEKS 7 & 8 || ACCELERATED 1 UNIT 1 PREVIEW - Number System Standard 7.NS.1: Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

- *Need some help with these skills? Click [HERE](#) for links to video lessons.*

) $66 + 88$ $22(3 + 4)$



A number line has negative values to the left of zero and positive values to the right



KEY IDEA

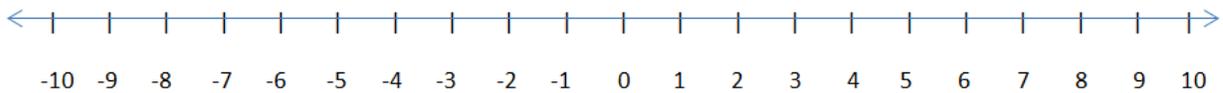


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of zero. Zero acts as a mirror – it is a reflection point for the positive and negative values. Any number and its opposite are called **additive inverses**.

- For example: -9 and 9 are additive inverses.
- $-\frac{1}{2}$ and $\frac{1}{2}$ are additive inverses.
- -5.3 and 5.3 are additive inverses.



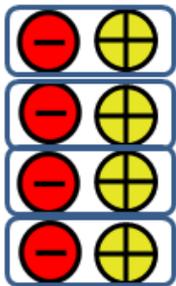
Plot each of the above values on the number line above. What do you notice?

Additive Inverse Property

Words The sum of an integer and its **additive inverse**, or opposite, is 0.

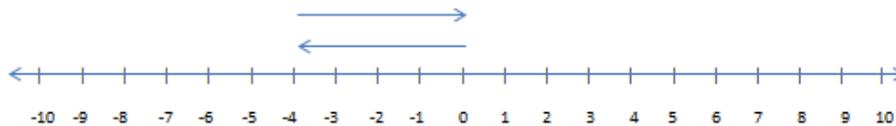
Numbers $6 + (-6) = 0$ $-25 + 25 = 0$

When added together, **additive inverses** combine to make zero. This can be shown with integer chips. For example: -4 and 4 are additive inverses.



We can represent -4 with four negative chips and 4 with four positive chips. For each negative that matches up with a positive, a **zero pair** is formed. **So the four negatives matched up with the four positives result in zero.**

It can also be shown on a number line that adding a number to its additive inverse results in zero:



7.NS.1a:

Exercises

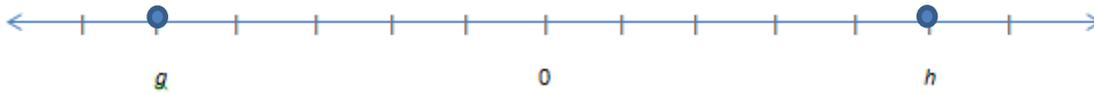
Determine the integer that makes the equation true.

- $0 = 6 + \underline{-6}$
- $\underline{15} + (-15) = 0$
- $\underline{-42} + 42 = 0$
- $-19 + \underline{19} = 0$
- $0 = \underline{51} + (-51)$
- $0 = \underline{-84} + 84$

7) The numbers g and h are both the same distance from zero on the number line below, but in opposite directions. What is the sum of g and h ? Explain how you found your answer.

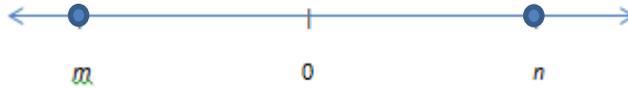
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___ The sum of g and h is zero. If h is at 10, then g is at (-10) . $10 + (-10) = 0$. Any number plus its opposite equals zero. _____

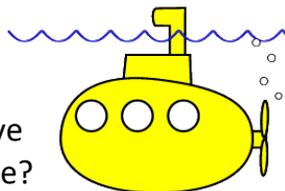
8) On the number line below, the numbers m and n are the same distance from zero. What is $m + n$? Explain how you found your answer.



___ If m and n are the same distance from zero, then they are opposites. Any number plus its opposite equals zero, so $m + n = 0$. _____

On the next page, problems #9 and #10 feature some situations in which certain quantities can be combined to make zero. Answer each question.

9) A submarine is 555 feet below sea level. In what direction and how far does the submarine need to move in order to reach the surface?



Write your answer and then a short explanation.

The submarine needs to move up, toward the surface, 555 feet. That will bring it back to an elevation of zero.



10) On its first play, a football team loses 8 yards. It loses 3 more on its second play. How many yards must it gain on its third play to get back to where it started? Write your answer and then a short explanation.

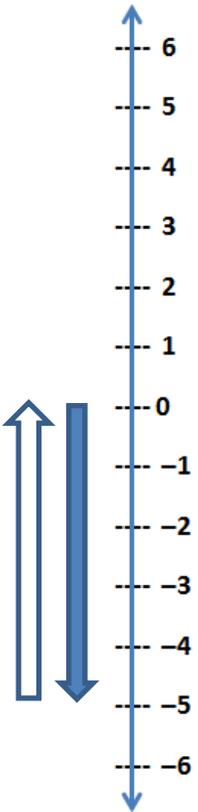
If the team lost 8 yards and then lost 3 yards, that is 11 yards lost total. To get back to where it started, the team, must gain 11 yards.

11) On each number line, model by drawing arrows how the given number and its opposite combine to make zero. The first example is done for you.

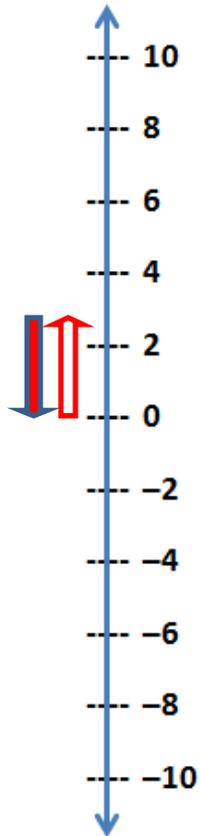
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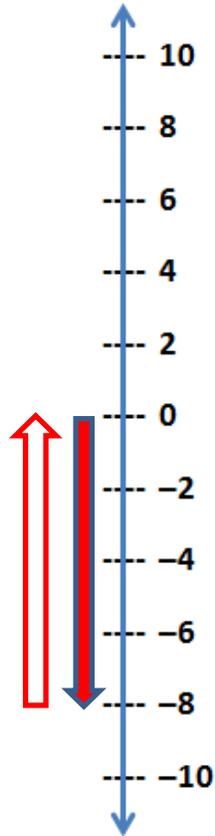
-5



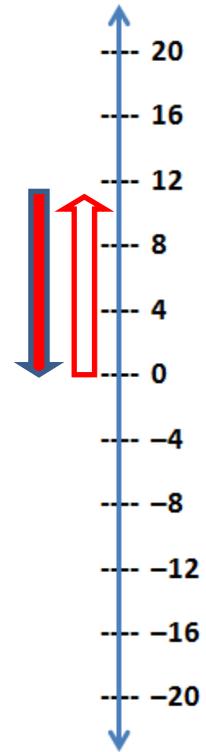
3



-8



11



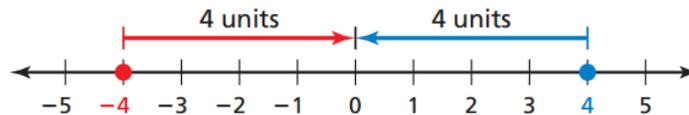
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Absolute value refers to the value of a number from zero on the number line. *Absolute value is always expressed as a positive number.* Study the information in the box below.

Absolute Value

Words The **absolute value** of an integer is the distance between the number and 0 on a number line. The absolute value of a number a is written as $|a|$.



Numbers

$$|-4| = 4$$

$$|4| = 4$$

7.NS.1a WRAP-UP!

Culminating Question: Describe two situations in which opposite quantities combine to make zero. Include integers in your situations.

Answers will vary. Samples: _____

__1. From the morning until the afternoon, the temperature rises 8 degrees. From the afternoon
__ until the evening, the temperature falls 8 degrees. The two changes add to zero.

__2. My father gave me 10 dollars. Then I spent the 10 dollars at the store. So now I have zero dollars.

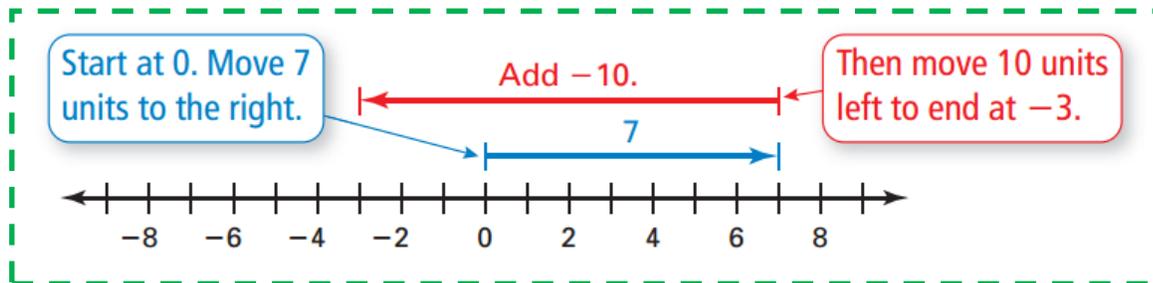
7.NS.1b: Adding Integers

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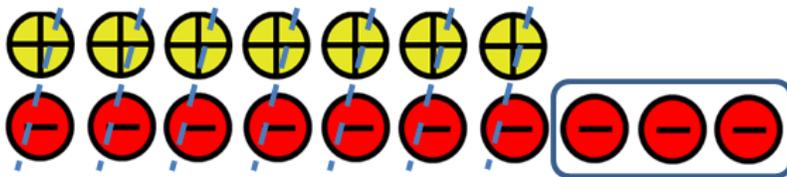
Accelerated 1

Adding integers with different signs can be modeled on a number line or with integer chips.

For example: **Add $7 + (-10)$.** This can be modeled by using a number line:



This can also be modeled with integer chips:



- There are seven zero pairs. A slash can be drawn through each zero pair since the positive and negative counters cancel each other out. Then there are three negative chips left over, so the result of the expression is -3.

When adding integers, remember the following processes:

Adding Integers with the Same Sign

Words Add the absolute values of the integers. Then use the common sign.

Numbers $2 + 5 = 7$ $-2 + (-5) = -7$

Adding Integers with Different Signs

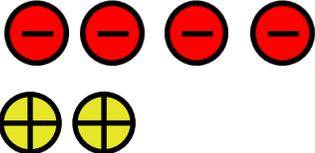
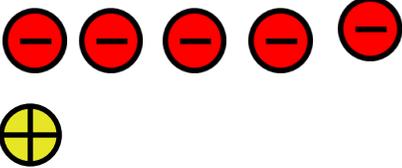
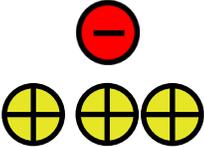
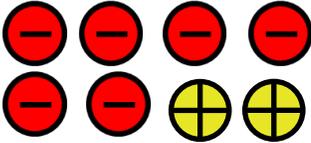
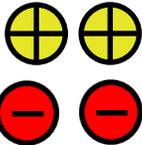
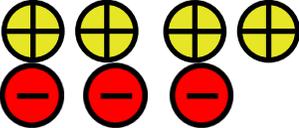
Words Subtract the lesser absolute value from the greater absolute value. Then use the sign of the integer with the greater absolute value.

Numbers $8 + (-10) = -2$ $-13 + 17 = 4$

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7.NS.1.b: Adding Integers with Different Signs

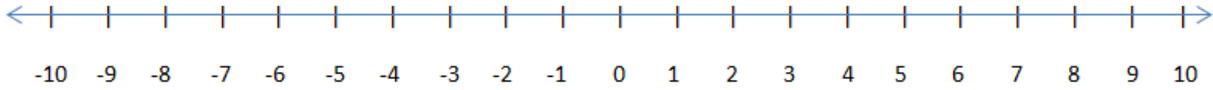
Expression	Draw Counters to Represent the Expression	Are There More Negatives or More Positives?	How Many More?	Sum of the Expression
$2 + (-4)$		more negatives	2	-2
$1 + (-5)$		more negatives	4	-4
$-1 + 3$		more positives	2	2
$(-6) + 2$		more negatives	4	-4
$-2 + 2$		same	0	0
$4 + (-3)$		more positives	1	1

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Accelerated 1

Use the number line to help determine the two points on the number line that are:

- 5 units from 0 ___ -5, 5 ___
- 5 units from 2 ___ -3, 7 ___
- 5 units from 0.5 ___ -4.5, 5.5 ___
- 5 units from -4 ___ -9, 1 ___



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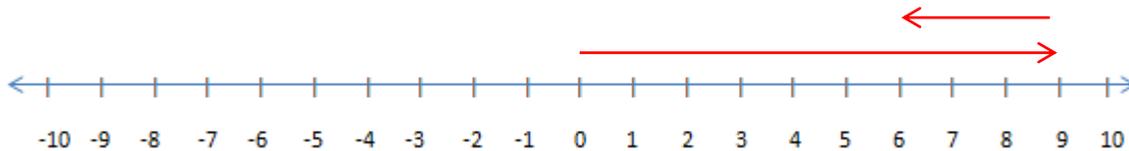
7.NS.1b: Modeling Adding Integers on a Horizontal Number Line

Draw vectors (arrows) to represent the sum of each expression. You should begin with the bottom arrow, representing the first number, at zero. An example is done for you.

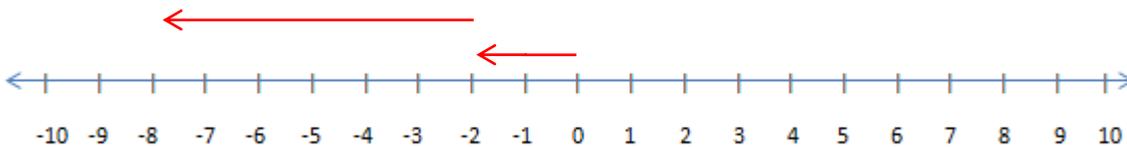
1. $-4 + 7$



2. $9 + (-3)$



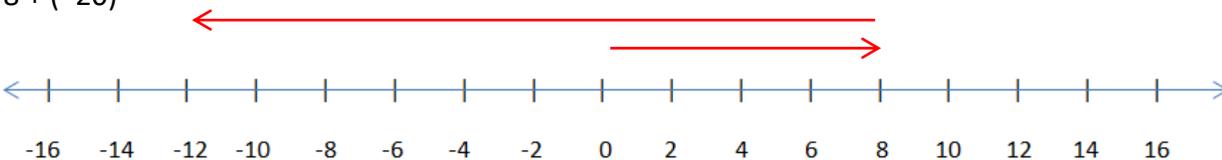
3. $-2 + (-6)$



4. $-3 + (-11)$



5. $8 + (-20)$



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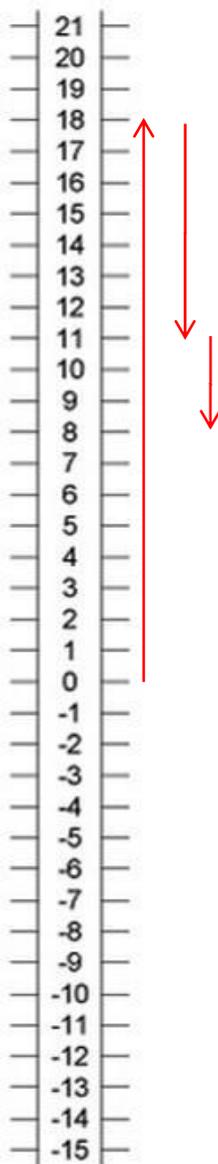
7.NS.1b: Modeling Adding Integers on a Vertical Number Line

For #1-3, model the expressions on the vertical number lines in order to find the sum. Again, begin the arrow representing the first number in the problem at zero.

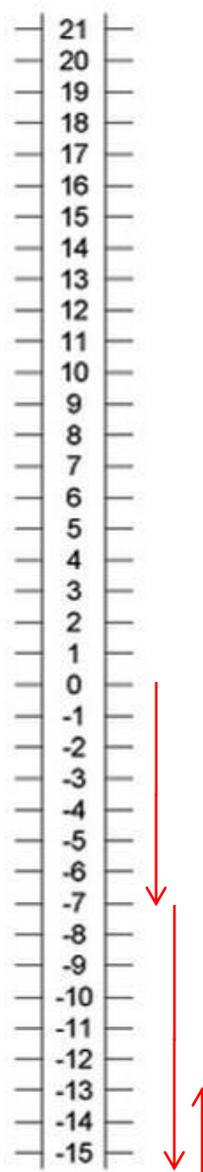
1) $-13 + 2$



2) $18 + (-7) + (-3)$



3) $-7 + (-9) + 3$



Summer Break Packet

Accelerated 1

7.NS.1b: Adding Integers in the Real World

Here are some examples of real-world problems that involve adding integers.

Example A

Derrick had overdrawn his bank account and had a balance of $-\$10$. He made a deposit of $\$55$. What was his new balance? Write an addition expression using integers and evaluate it to solve the problem.



- $-10 + 55 \leftarrow$ expression to represent the situation
- $-10 + 55 = 45 \leftarrow$ evaluation
- Derrick's new balance is $\$45$. \leftarrow summary

Example B

On one play, a quarterback lost 11 yards. On the next play, the quarterback was tackled for a loss of 6 yards. How many yards did the quarterback lose on the two plays? Write an addition expression using integers and evaluate it to solve the problem.

$-11 + (-6) \leftarrow$ expression to represent the situation

$-11 + (-6) = -17 \leftarrow$ evaluation

The quarterback lost a total of **17 yards**. \leftarrow summary

7.NS.1b: Word Problems

1) Kristina is playing a video game and has 85 points. She steps on a spike and loses 20 points and then picks up a power boost to gain 35 points. Write an addition expression to represent the situation. Evaluate your expression to determine Kristina's new score.



$85 + (-20) + 35 = 100$ points is her new score

2) The table at right shows the income and expenses for a school

Concessions	DJ	Photo booth	Decorations
\$175	$-\$75$	\$120	$-\$60$

dance. The school's goal was to net $\$150$ in profit. Write an addition expression that represents the sum of the income and expenses. Evaluate the expression to determine if the school achieved its goal of raising $\$150$ in profit.

$175 + (-75) + 120 + (-60)$

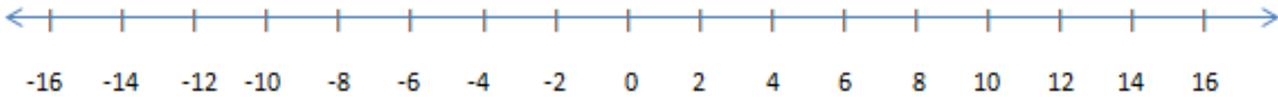
$100 + 60 = \$160$. Yes, the school achieved its goal.

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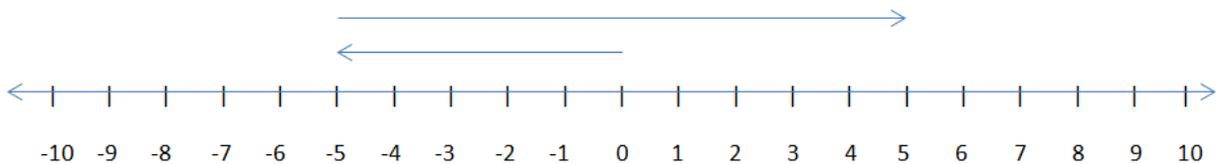
7.NS.1b: Representing Distance on a Number Line

Determine the numbers that make the statement true. Use the number line as a model if needed.



- 1) What numbers are each exactly 8 units from -1 ? -9 and 7
- 2) What numbers are each exactly 5 units from 2? -3 and 7
- 3) What numbers are each exactly 6 units from 6? 0 and 12
- 4) What numbers are each exactly 10 units from -4 ? -14 and 6
- 5) What numbers are each exactly 7 units from -5 ? -12 and 2

6) Write a real-life situation that could be modeled by the expression shown on the number line below.



Answers will vary.

Sample: I walked out on the sidewalk in front of my house and took five steps

backward. Then I walked 10 steps forward. I finished five steps ahead of

where I started.