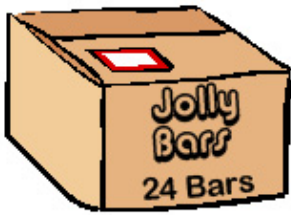


### Unit 3, Activity 2, Candy Bars

Name: \_\_\_\_\_

Date: \_\_\_\_\_



- 1) At Tasty Candy Co. different types of candy bars are packaged with different numbers of bars in each box. Jolly bars are packaged with 24 bars in each box, Nutty Bars with 20, and Cocoa Bars with 32. Write an expression that illustrates buying 5 boxes of each type of candy bar.
- 2) Use the distributive property to find the total number of candy bars. Show your work.
- 3) If you sell 3 boxes of Jolly Bars, 5 boxes of Nutty Bars, and 1 box of Cocoa Bars, how many bars did you sell? Show your work.
- 4) George sold 3 boxes of each kind of candy bar. Write an expression and evaluate it to find how many candy bars George sold.
- 5) Kandice sold 4 boxes of Jolly Bars, 4 boxes of Cocoa Bars, and 2 boxes of Nutty Bars. Write an expression and evaluate it to find how many candy bars Kandice sold.
- 6) If you sell more than three boxes of Nutty Bars, the company will give you an extra bar for each box. Write the expression that represents the number of Nutty Bars you will have if you sold 4 boxes. How many candy bars is this? Show your work.
- 7) The different bars can cost different amounts. If Cocoa Bars sell for \$0.50 each, how much would 5 boxes of Cocoa Bars cost?

### Unit 3, Activity 2, Candy Bars with Answers

Name: \_\_\_\_\_

D



- 1) At Tasty Candy Co. different types of candy bars are packaged with different numbers of bars in each box. Jolly Bars are packaged with 24 bars in each box, Nutty Bars with 20, and Cocoa Bars with 32. Write an expression that illustrates buying 5 boxes of each type of candy bar.

$$5(24 + 20 + 32)$$

- 2) Use the distributive property to find the total number of candy bars. Show your work.

$$5(24 + 20 + 32) = \underline{380}$$

- 3) If you sell 3 boxes of Jolly bars, 5 boxes of Nutty Bars, and 1 box of Cocoa Bars, how many bars did you sell? Show your work.  $3(24) + 5(20) + 1(32) = \underline{204}$

- 4) George sold 3 boxes of each kind of candy bar. Write an expression and evaluate it to find how many candy bars George sold.

$$3(24 + 20 + 32) = \underline{228}$$

- 5) Kandice sold 4 boxes of Jolly Bars, 4 boxes of Cocoa Bars, and 2 boxes of Nutty Bars. Write an expression and evaluate it to find how many candy bars Kandice sold.

$$4(24 + 32) + 2(20) = \underline{264}$$

- 6) If you sell more than three boxes of Nutty Bars, the company will give you an extra bar for each box. Write the expression that represents the number of Nutty Bars you will have if you sold 4 boxes. How many candy bars is this? Show your work.

$$4(20 + 1) = \underline{84}$$

- 7) The different bars can cost different amounts. If Cocoa Bars sell for \$0.50 each, how much would 5 boxes of Cocoa Bars cost?

$$5(32 \times .50) = \$80$$

**Unit 3, Activity 4, Square Roots**

What is the approximate value of $\sqrt{15}$	Estimate $\sqrt{200}$	What is the value of $\sqrt{25}$	Estimate $\sqrt{130}$	What is the approximate value of $\sqrt{50}$
What is the value of $\sqrt{121}$	What is the approximate value of $\sqrt{175}$	What is the value of $\sqrt{100}$	What is the approximate value of $\sqrt{350}$	What is the value of $\sqrt{289}$
Estimate $-\sqrt{102}$	What is the value of $\sqrt{324}$	What is the approximate value of $-\sqrt{53}$	Estimate $\sqrt{227}$	Estimate $-\sqrt{301}$
What is the approximate value of $\sqrt{205}$	Estimate $-\sqrt{400}$	Estimate $\sqrt{98}$	What is the value of $-\sqrt{225}$	What is the approximate value of $-\sqrt{47}$
What is the value of $-\sqrt{81}$	What is the value of $\sqrt{196}$	What is the approximate value of $\sqrt{6}$	Estimate $-\sqrt{13}$	Estimate $-\sqrt{28}$
What is the approximate value of $\sqrt{314}$	What is the value of $-\sqrt{36}$	Estimate $-\sqrt{141}$	What is the approximate value of $-\sqrt{260}$	What is the value of $-\sqrt{169}$
Estimate $-\sqrt{333}$	What is the approximate value of $-\sqrt{360}$	What is the value of $\sqrt{64}$	What is the approximate value of $-\sqrt{391}$	What is the value of $-\sqrt{324}$

### Unit 3, Activity 7, What's My Value?

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Determine which replacement values in the second column should be used to produce the given value for each expression in the first column.

- |       |                                     |          |
|-------|-------------------------------------|----------|
| _____ | 1. $\sqrt{x} + 5 = 7$               | $x = 1$  |
| _____ | 2. $x^2 + 5 = 30$                   | $x = 2$  |
| _____ | 3. $x^3 + \sqrt{4} = 29$            | $x = 3$  |
| _____ | 4. $x^2 + x^3 = 810$                | $x = 4$  |
| _____ | 5. $\sqrt{100} - x^2 = 9$           | $x = 5$  |
| _____ | 6. $\frac{\sqrt{9}}{3} + x^2 = 65$  | $x = 6$  |
| _____ | 7. $x^2 - \sqrt{9} = 46$            | $x = 7$  |
| _____ | 8. $x^2 + \frac{\sqrt{81}}{3} = 39$ | $x = 8$  |
| _____ | 9. $x^3 - \sqrt{4} = 6$             | $x = 9$  |
| _____ | 10. $2x^2 + \sqrt{25} = 205$        | $x = 10$ |

### Unit 3, Activity 7, What's My Value? with Answers

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Determine which replacement values from the second column should be used to make the equation from the first column true.

<u><math>x=4</math></u>	1. $\sqrt{x} + 5 = 7$	$x = 1$
<u><math>x=5</math></u>	2. $x^2 + 5 = 30$	$x = 2$
<u><math>x=3</math></u>	3. $x^3 + \sqrt{4} = 29$	$x = 3$
<u><math>x=9</math></u>	4. $x^2 + x^3 = 810$	$x = 4$
<u><math>x=1</math></u>	5. $\sqrt{100} - x^2 = 9$	$x = 5$
<u><math>x=8</math></u>	6. $\frac{\sqrt{9}}{3} + x^2 = 65$	$x = 6$
<u><math>x=7</math></u>	7. $x^2 - \sqrt{9} = 46$	$x = 7$
<u><math>x=6</math></u>	8. $x^2 + \frac{\sqrt{81}}{3} = 39$	$x = 8$
<u><math>x=2</math></u>	9. $x^3 - \sqrt{4} = 6$	$x = 9$
<u><math>x=10</math></u>	10. $2x^2 + \sqrt{25} = 205$	$x = 10$

**Unit 3, Activity 8, What's My Number?(Part 1)**

Name \_\_\_\_\_

Date \_\_\_\_\_

Complete the number puzzle below following the steps given. Record each step in the box to determine the final result.

**Puzzle 1:**

- Step 1:** Choose a two-digit number.
- Step 2:** Add that number to itself.
- Step 3:** Add 20.
- Step 4:** Subtract 12.
- Step 5:** Subtract the original number.
- Step 6:** Add 5.
- Step 7:** Subtract the original number.
- Step 8:** What is the final result?

--

Next, write an algebraic expression that describes what happened to the original number,  $n$ , in each step.

Step 1: Choose a two-digit number. Step 2: Add that number to itself. Step 3: Add 20 Step 4: Subtract 12 Step 5: Subtract the original number. Step 6: Add 5 Step 7: Subtract the original number.	Step 1: _____ Step 2: _____ Step 3: _____ Step 4: _____ Step 5: _____ Step 6: _____ Step 7: _____  What is the final result?
--	--

**Puzzle 2:**

Step 1: Write down any whole number. Step 2: Add the number that is 1 less than the original number. Step 3: Add 9 to this result. Step 4: Divide the sum by 2. Step 5: Subtract the original number. Step 6: What is the final result?	Step 1: _____ Step 2: _____  Step 3: _____ Step 4: _____ Step 5: _____ Step 6: _____
--	--

**Puzzle 3:**

Step 1: Write down any whole number. Step 2: Multiply this number by 6. Step 3: Add 10. Step 4: Subtract 4. Step 5: Take half. Step 6: Multiply by 4 Step 7: Divide by 12. Step 8: Subtract your original number.	Step 1: _____ Step 2: _____ Step 3: _____ Step 4: _____ Step 5: _____ Step 6: _____ Step 7: _____ Step 8: _____
--	--

**Unit 3, Activity 8, What's My Number?(Part 1) with answers**

Puzzle 1 with solutions:

Step 1: Choose a two-digit number. Step 2: Add that number to itself. Step 3: Add 20 Step 4: Subtract 12 Step 5: Subtract the original number. Step 6: Add 5 Step 7: Subtract the original number. Step 8: What is the final result?	Step 1: $n$ Step 2: $n + n = 2n$ Step 3: $2n + 20$ Step 4: $2n + 20 - 12 = 2n + 8$ Step 5: $2n + 8 - n = n + 8$ Step 6: $n + 8 + 5 = n + 13$ Step 7: $n + 13 - n = 13$ (final result)
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Puzzle 2 with solutions:

Step 1: Write down any whole number. Step 2: Add the number that is 1 less than the original number. Step 3: Add 9 to this result. Step 4: Divide the sum by 2. Step 5: Subtract the original number. Step 6: What is the final result?	Step 1: $n$ Step 2: $n + n - 1 = 2n - 1$  Step 3: $2n - 1 + 9 = 2n + 8$ Step 4: $(2n + 8) \div 2 = n + 4$ Step 5: $n + 4 - n = 4$ (final result) Step 6: shown as the result of step 5
--	--

Puzzle 3 with solutions:

Step 1: Write down any whole number. Step 2: Multiply this number by 6. Step 3: Add 10. Step 4: Subtract 4.  Step 5: Take half. Step 6: Multiply by 4 Step 7: Divide by 12. Step 8: Subtract your original number.	Step 1: $n$ Step 2: $n \times 6 = 6n$ Step 3: $6n + 10$ Step 4: $6n + 10 - 4 = 6n + 6$ Step 5: $\frac{6n + 6}{2} = 3n + 3$ Step 6: $4(3n + 3) = 12n + 12$ Step 7: $\frac{12n + 12}{12} = n + 1$ Step 8: $n + 1 - n = 1$ (final result)
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**Unit 3, Activity 9, What's My Number? (Part 2)**

Name \_\_\_\_\_ Date \_\_\_\_\_

Examine the following puzzle. Do you think that the result of 4 will work if you used numbers besides whole numbers?

Step 1: Write down any whole number.	Step 1: $n$
Step 2: Add the number that is 1 less than the original number.	Step 2: $n + n - 1 = 2n - 1$
Step 3: Add 9 to this result.	Step 3: $2n - 1 + 9 = 2n + 8$
Step 4: Divide the sum by 2.	Step 4: $(2n + 8) \div 2 = n + 4$
Step 5: Subtract the original number.	Step 5: $n + 4 - n = 4$ ( <i>final result</i> )
Step 6: What is the final result?	Step 6: <i>shown as the result of step 5</i>

Make your prediction below:

Now try it! Complete the grid to determine if the final result will be the same with all the numbers given.

Step 1:	5	$\frac{1}{2}$	0.75	-3
Step 2:				
Step 3:				
Step 4:				
Step 5:				
Step 6:				



**Unit 3, Activity 9, What's My Number? (Part 2) with Answers**

Name \_\_\_\_\_ Date \_\_\_\_\_

Examine the following puzzle. Do you think that the result of 4 will work if you used numbers besides whole numbers?

Step 1: Write down any whole number.	Step 1: $n$
Step 2: Add the number that is 1 less than the original number.	Step 2: $n + n - 1 = 2n - 1$
Step 3: Add 9 to this result.	Step 3: $2n - 1 + 9 = 2n + 8$
Step 4: Divide the sum by 2.	Step 4: $(2n + 8) \div 2 = n + 4$
Step 5: Subtract the original number.	Step 5: $n + 4 - n = 4$ (final result)
Step 6: What is the final result?	Step 6: shown as the result of step 5

Make your prediction below:

Now try it! Complete the grid to determine if the final result will be the same with all the numbers given.

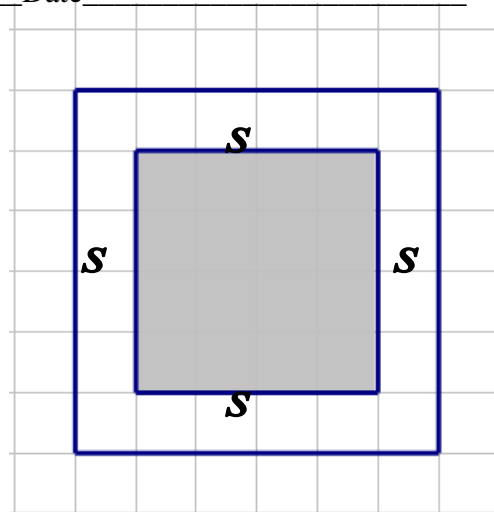
*Solutions:*

Step 1:	5	$\frac{1}{2}$	0.75	-3
Step 2:	$5 + 5 - 1 = 9$	$\frac{1}{2} + \frac{1}{2} - 1 = 0$	$0.75 + 0.75 - 1 = 0.50$	$-3 + -3 - 1 = -6 - 1$
Step 3:	$9 + 9 = 18$	$0 + 9 = 9$	$0.50 + 9 = 9.50$	$-6 - 1 + 9 = -7 + 9 = 2$
Step 4:	$18 \div 2 = 9$	$9 \div 2 = \frac{9}{2}$	$9.50 \div 2 = 4.75$	$2 \div 2 = 1$
Step 5:	$9 - 5 = 4$	$\frac{9}{2} - \frac{1}{2} = \frac{8}{2}$	$4.75 - 0.75 = 4$	$1 - (-3) = 4$
Step 6:	4	4	4	4

**Unit 3, Activity 10, Tiling Tubs**

Name \_\_\_\_\_ Date \_\_\_\_\_

Hot tubs and in-ground swimming pools are sometimes surrounded by borders of tiles. This drawing shows a square hot tub with sides of length  $s$  feet. This tub is surrounded by a border of square tiles. Each border tile measures 1 foot on each side.



1. How many 1-foot square tiles will be needed for the border of a square hot tub that has edge length  $s$  feet? \_\_\_\_\_

2. Express the total number of tiles in as many ways as you can.

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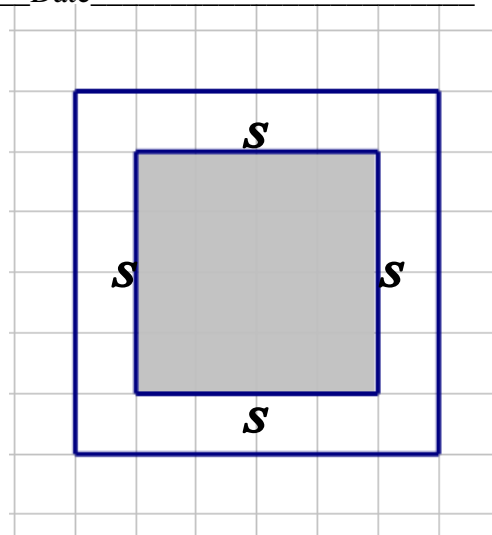
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3. Be prepared to convince your classmates that the expressions are equivalent.

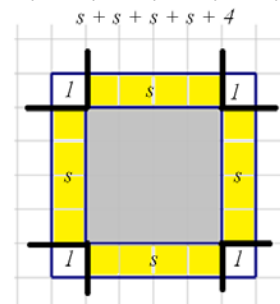
### Unit 3, Activity 10, Tiling Tubs with Answers

Name \_\_\_\_\_ Date \_\_\_\_\_

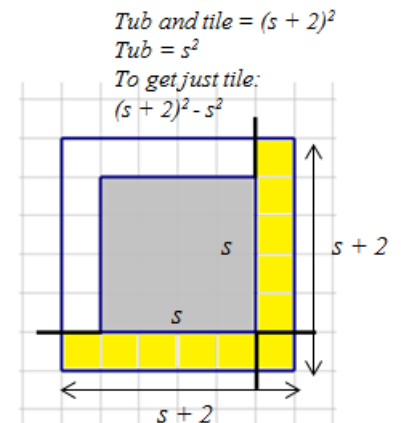
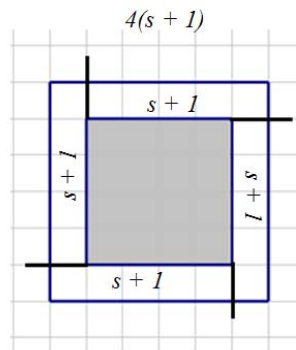
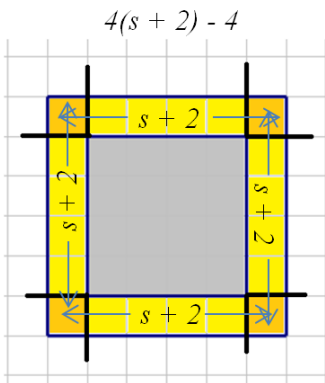
Hot tubs and in-ground swimming pools are sometimes surrounded by borders of tiles. This drawing shows a square hot tub with sides of length  $s$  feet. This tub is surrounded by a border of square tiles. Each border tile measures 1 foot on each side.



- How many 1-foot square tiles will be needed for the border of a square hot tub that has edge length  $s$  feet?  
*One possible way:  $s + s + s + s + 4$*



- Express the total number of tiles in as many ways as you can.  $4(s + 2) - 4$ ;  $4(s + 1)$ ;  $(s + 2)^2 - s^2$



- Be prepared to convince your classmates that the expressions are equivalent.

$4(s + 1) = s + s + s + s + 4$  using the distributive property

$$4(s + 2) - 4$$

$$4s + 8 - 4$$

$$4s + 4 \text{ which is the same as } 4(s + 1)$$

### Unit 3, Activity 11, Equation Relationships

Name \_\_\_\_\_ Date \_\_\_\_\_

Substitute the given values for  $a$  in the equations in the word grid.

$a$	$6 - 3a$	$3(2 - a)$	$-3a + 6$	$-6a$	$a + 14$
-5					
-4					
-3					
-2					
-1					
0					
1					
2					
3					
4					
5					

What do you notice about how some of the equations (columns) are related? Make three observations about how the quantities are related.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

For what value of  $a$  is  $-6a = a + 14$ ? \_\_\_\_\_

For what value of  $a$  is  $a + 14 = 6 - 3a$ ? \_\_\_\_\_

What are some other questions that can be asked from the relationships you observed in the grid?

### Unit 3, Activity 11, Equation Relationships with Answers

Name \_\_\_\_\_ Date \_\_\_\_\_

Substitute the given values for  $a$  in the equations in the table.

$a$	$6 - 3a$	$3(2 - a)$	$-3a + 6$	$-6a$	$a + 14$
-5	21	21	21	30	9
-4	18	18	18	24	10
-3	15	15	15	18	11
-2	12	12	12	12	12
-1	9	9	9	6	13
0	6	6	6	0	14
1	3	3	3	-6	15
2	0	0	0	-12	16
3	-3	-3	-3	-18	17
4	-6	-6	-6	-24	18
5	-9	-9	-9	-30	19

What do you notice about how some of the equations (columns) are related? Make three observations about how the quantities are related. *Observations will vary; Make sure there is discussion about the equivalence of the first three expressions and how they are related through the distributive and commutative properties.*

For what value of  $a$  is  $-6a = a + 14$ ? -2

For what value of  $a$  is  $a + 14 = 6 - 3a$ ? -2

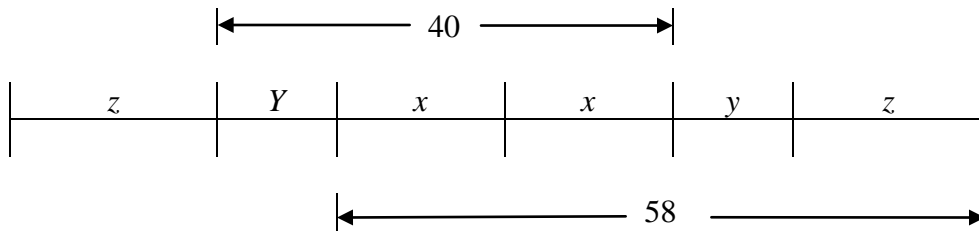
What are some other questions that can be asked from the relationships you observe in the table?

### Unit 3, Activity 12, The Mystery Line

Name \_\_\_\_\_ Date \_\_\_\_\_

## The Mystery Line

In this diagram, sections labeled with the same letter have the same length.



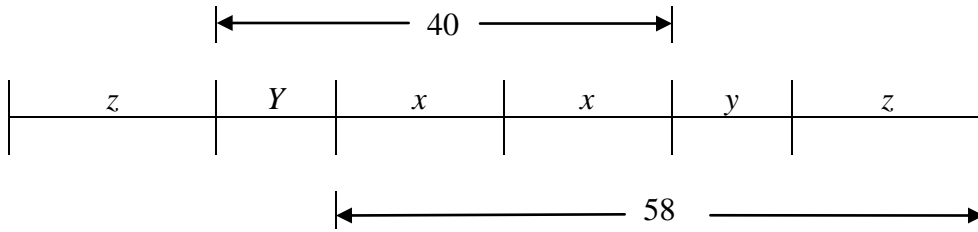
Can you find the length of section  $z$ ? Write your answer below. *Hint: It might help to set up a series of equations.*

*Unit 3, Activity 12, The Mystery Line with Answers*

Name \_\_\_\_\_ Date \_\_\_\_\_

## The Mystery Line

In this diagram, sections labeled with the same letter have the same length.



Can you find the length of section  $z$ ? Write your answer below. *Hint: It might help to set up a series of equations.*

*Solution:*

*The section that is 40 units in length can be represented as  $y + x + x$  or  $2x + y = 40$ .*

*The section that is 58 units in length can be represented by  $x + x + y + z$  or  $2x + y + z = 58$ .*

*Next, substitute 40 for  $2x + y$  in the first equation:  $40 + z = 58$  so  $z = 18$*

*Unit 3, Activity 13, Equations*

$3p + 2 = 23$	$3n + 1 = 10$
$1 + 4g = 13$	$2t + 3 = -3$
$4m - 6 = 22$	$6 + 3g = 0$
$2j + 7 = 1$	$3y + 1 = 7$
$2f - 4 = 2$	$-2x - 7 = 3$
$4 + 5r = -11$	$5h + 4 = 19$
$1 + 2r = -3$	$4x + 5 = 13$
$-6y + 1 = -17$	$4 + 2c = 8$
$-3c + 9 = 3$	$-3n - 8 = 7$



*Unit 3, Activity 13, Equations with Answers*

$3p + 2 = 23$ $p = 7$	$3n + 1 = 10$ $n = 3$
$1 + 4g = 13$ $g = 3$	$2t + 3 = -3$ $t = -3$
$4m - 6 = 22$ $m = 7$	$6 + 3g = 0$ $g = -2$
$2j + 7 = 1$ $j = -3$	$3y + 1 = 7$ $y = 2$
$2f - 4 = 2$ $f = 3$	$-2x - 7 = 3$ $x = -5$
$4 + 5r = -11$ $r = -3$	$5h + 4 = 19$ $h = 3$
$1 + 2r = -3$ $r = -2$	$4x + 5 = 13$ $x = 2$
$-6y + 1 = -17$ $y = 3$	$4 + 2c = 8$ $c = 2$
$-3c + 9 = 3$ $c = 2$	$-3n - 8 = 7$ $n = -5$

### Unit 3, Activity 15, Inequality Chart

Name \_\_\_\_\_ Date \_\_\_\_\_

Read the inequality verbal phrases in the chart below and indicate whether you understand by placing a (+) if you know the meaning and the symbolic notation, a (✓) if you know just the meaning, or a (-) if you do not know the meaning or the symbolic notation. Next, write what you think the meaning and symbolic notation might be.

Verbal Phrase	+	✓	-	Meaning	Symbolic
More than 5 buses					
Up to 5 buses					
Spend at least \$5					
Spend less than \$5					

---

Name \_\_\_\_\_ Date \_\_\_\_\_

Read the inequality verbal phrases in the chart below and indicate whether you understand by placing a (+) if you know the meaning and the symbolic notation, a (✓) if you know just the meaning, or a (-) if you do not know the meaning or the symbolic notation. Next, write what you think the meaning and symbolic notation might be.

Verbal Phrase	+	✓	-	Meaning	Symbolic
More than 5 buses					
Up to 5 buses					
Spend at least \$5					
Spend less than \$5					

### Unit 3, Activity 15, Inequality Chart with Answers

Name \_\_\_\_\_ Date \_\_\_\_\_

Read the inequality verbal phrases in the chart below and indicate whether you understand by placing a (+) if you know the meaning and the symbolic notation, a (✓) if you know just the meaning, or a (-) if you do not know the meaning or the symbolic notation. Next, write what you think the meaning and symbolic notation might be.

<b>Verbal Phrase</b>	<b>+</b>	<b>✓</b>	<b>-</b>	<b>Meaning</b>	<b>Symbolic</b>
More than 5 buses				Can have 6 buses or more	$x > 5$
Up to 5 buses				Can have 5 buses or less	$x \leq 5$
Spend at least \$5				Can spend \$5 or more	$x \geq 5$
Spend less than \$5				Can spend \$4 or less	$x < 5$

*Unit 3, Activity 15, Inequality Bingo*



### Unit 3, Activity 15, Verbal Inequalities

Use with Inequality Bingo version 1. Cut apart.

1. 6 less than James	$<$
2. Children under 13 are not permitted without an adult	$<$
3. 12 less than 2 times Sam's amount	$<$
4. Kenneth has fewer checkers than Ronald	$<$
5. 5 times a number is greater than 25	$>$
6. 4 more than Kerri	$>$
7. Marci has more than Timothy	$>$
8. Kaci had to spend more than \$50 to get the discount	$>$
9. The swing's maximum capacity is 50 pounds	$\leq$
10. No more than 6 people can ride at the same time	$\leq$
11. A scooter has a maximum speed of 12mph	$\leq$
12. The bench will accommodate up to 7 people	$\leq$
13. At least 2 hours of homework	$\geq$
14. The sum of 3 and a number is at least 9	$\geq$
15. You must be at least 18 to register to vote	$\geq$
16. A grade of no less than 90 is considered an A	$\geq$

### Unit 3, Activity 16, Inequality Situations and Graphs

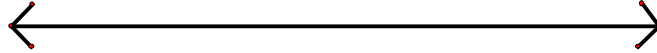
Use with *Inequality Bingo version 2. Cut apart. Have students write one of the inequalities in each block*

$x + 2y > 26$	Joe's age, $x$ , added to twice Morgan's age, $y$ , is greater than 26
$3x + y < 7$	3 times the number of pennies, $x$ , plus the number of dimes, $y$ , is less than 7
$l \geq 5$	Greg must run at least 5 laps around the track after practice.
$q \leq 4$	Deon cannot miss more than 4 questions on the test.
$c \leq 35$	The cost can be no more than \$35.
$b \leq 150$	The building is no more than 150 ft tall.
$n + 7 \leq 27$	A number increased by 7 is no more than 27.
$n - 2 > 17$	A number decreased by 2 is more than 17.
$3n \geq 24$	Three times a number is no less than 24.
$w < 8$	The baby weighed less than 8 pounds at birth.
$w \leq 15$	Kirby's family waited no more than 15 minutes to be seated at the restaurant.
$d < 13$	TJ drives less than 13 miles to school everyday.
$w > 6$	Mandi walks more than 6 miles everyday
$s \geq 24$	Cedric swims at least 24 laps every day in his pool.

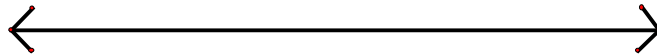
**Unit 3, Activity 16, Inequality Situations and Graphs**

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

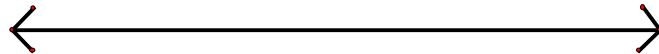
- a. Jamie went to the mall and found a pair of in-line skates that he wanted to buy for \$88. He makes \$5.50/hour babysitting his little brother. He already has \$13.25. Write and solve an inequality to find how many hours and minutes he must baby-sit to buy the skates. Graph the solution set.



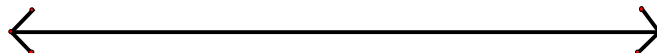
- b. A group of 8 students could not spend more than \$78.50 when they went to the movies. If the tickets cost \$6.50 each and snacks were \$1.50 each, how many snacks could the students buy?



- c. Coach told the team members that they must each earn at least \$30 this week for a weekend tournament. Tim knows his dad will give him \$12 to mow his grandmother's lawn and \$8 for each car he washes. If Tim mows his grandmother's lawn, write and solve an inequality to find how many cars he needs to wash to earn at least \$30. Graph the solution set.



- d. Sam wants to go to Washington D.C. in the spring. The trip will cost him \$380 to go with his 8<sup>th</sup> grade class. Sam has saved \$150 and he makes \$5.25/hour when he works with his dad after school. Write and solve an inequality to find how many hours Sam must work with his dad to have at least \$380. Graph the solution set.



### Unit 3, Activity 16, Inequality Situations and Graphs with Answers

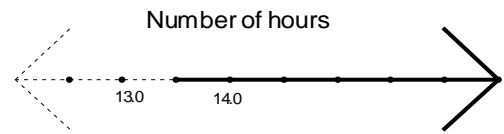
- a. Jamie went to the mall and found a pair of in-line skates that he wanted to buy for \$88. He makes \$5.50/hour babysitting his little brother. He already has \$13.25. Write and solve an inequality to find how many hours and minutes he must baby-sit to buy the skates. Graph the solution set.

$$5.5x \geq 88 - 13.25$$

$$x \geq 74.75/5.5$$

$$x \geq 13.59 \text{ hours}$$

*He must work at least 13 hours and 35 minutes.*



- b. A group of 8 students could not spend more than \$78.50 when they went to the movies. If the tickets cost \$6.50 each and snacks were \$1.50 each, how many snacks could the students buy?

$$\$78.50 \leq 8(\$6.50) +$$

$$1.5x$$

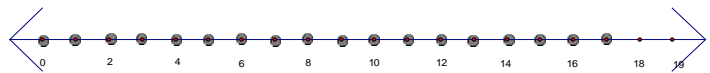
$$\$78.50 - 52.00 \leq 1.5x$$

$$26.50 \leq 1.5x$$

$$17.7 \leq x$$

$$x \geq 17.7 \text{ snacks}$$

Number of Snacks Purchased



- c. Coach told the team members that they must each earn at least \$30 this week for a weekend tournament. Tim knows his dad will give him \$12 to mow his grandmother's lawn and \$8 for each car he washes. If Tim mows his grandmother's lawn, write and solve an inequality to find how many cars he needs to wash to earn at least \$30. Graph the solution set.

$$12 + 8x \geq 30$$

$$8x \geq 30 - 12$$

$$8x \geq 18$$

$$x \geq 2 \frac{1}{9} \text{ or he must wash}$$

$$\text{at least 3 cars}$$

*He must wash at least 3 cars.*

Number of cars to wash



- d. Sam wants to go to Washington D.C. in the spring. The trip will cost him \$380 to go with his 8<sup>th</sup> grade class. Sam has saved \$150 and he makes \$5.25/hour when he works with his dad after school. Write and solve an inequality to find how many hours Sam must work with his dad to have at least \$380. Graph the solution set.

$$150 + 5.25x \geq 380$$

$$5.25x \geq 380 - 150$$

$$5.25x \geq 230$$

$$x \geq 230/5.25$$

$$x \geq 43.80952381$$

*He must work at least 44 hours to have enough money.*

Number of hours

