November 3, 2014 Period 4 Lesson 3.2

Learning Objective: Students will be able to write an algebraic expression that represented a verbal phrase.

Warm Up

1.
$$\frac{1}{10} + \frac{13}{18}$$

5.
$$\frac{7}{13} + \frac{1}{5}$$

9.
$$\frac{5}{8} + \frac{2}{7}$$

$$2. \ \frac{3}{16} + \frac{1}{6}$$

6.
$$\frac{7}{20} + \frac{11}{20}$$

10.
$$\frac{4}{15} + \frac{3}{5}$$

Warm Up Answers

1.
$$\frac{1}{10} + \frac{13}{18} = \frac{37}{45}$$

5.
$$\frac{7}{13} + \frac{1}{5}$$

$$= \frac{48}{65}$$

9.
$$\frac{5}{8} + \frac{2}{7}$$

$$= \frac{51}{56}$$

$$2. \frac{3}{16} + \frac{1}{6} \\
= \frac{17}{48}$$

$$6. \frac{7}{20} + \frac{11}{20} \\
= \frac{9}{10}$$

$$10. \ \frac{4}{15} + \frac{3}{5} \\
= \frac{13}{15}$$

Homework Answers

3.1 Record and Practice Journal

valuate the everencie	n.u.b.o. 2 . 4 . b . E o.	nd - 40	
-	on when $a = 4$, $b = 5$, and		
1. a + 7	2. b-3 2	3. 9 <i>c</i>	
11	2	90	
4. 25 ÷ <i>b</i>	5. a • c	6. $b - a$	
5	40	1	
7. $a + b + c$	8.	9. 4 <i>a</i> – 7	
19	2	9	
of Hour. Yo	ou only have 8 o	ups of nour.	
The expression 9a musical performan	+ 6s is the cost for a adult	s and s students to see a	
a. Find the total co	ost for three adults and five	students.	
\$57			
h. Find the total o			
	ost for four adults and four	students.	
\$60	ost for four adults and four	students.	

Lesson 3.2

November 3, 2014

Essential Question:

How can you write an expression that represents an unknown quantity?

Lesson 3.2

November 3, 2014

Lesson Objective:

Students will be able to:

write an algebraic expression that represented a verbal phrase.

Self-Evaluation Scale

Score	Description
4	I can teach other students how to write an algebraic expression that represented a verbal phrase.
3	I can write an algebraic expression that represented a verbal phrase.
2	I recognize, but still need help to write an algebraic expression that represented a verbal phrase.
1	I do not know how to write an algebraic expression that represented a verbal phrase.

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tl

a. Complete the table.

Variable	Phrase	Expression
n	4 more than a number	7+4
m	the difference of a number and 3	W-3
x	the sum of a number and 8	8+4
p	10 less than a number	12-10
n	7 units farther away	7+7
t	8 minutes sooner	オー よ
w	12 minutes later	W+12
у	a number <mark>increased</mark> by 9	9+7

Some words that imply math operations

Operation	Addition	Subtraction	Multiplication	Division
Key Words and Phrases	added to plus sum of more than increased by total of and	subtracted from minus difference of less than decreased by fewer than take away	multiplied by times product of twice of	divided by quotient of

1 Writing Numerical Expressions

Write the phrase as an expression.

a. 8 fewer than 21

21 - 8

The phrase fewer than means subtraction.

b. the product of 30 and 9

 30×9 , or $30 \cdot 9$

The phrase product of means multiplication.

2 Writing Algebraic Expressions

Write the phrase as an expression.

a. 14 more than a number x

$$x + 14$$

The phrase more than means addition.

b. a number *y* minus 75

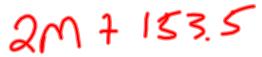
$$y - 75$$

The word minus means subtraction.

c. the quotient of 3 and a number z

$$3 \div z$$
, or $\frac{3}{z}$

The phrase quotient of means division.



Writing an Algebraic Expression

The length of Interstate 90 from the West Coast to the East Coast is 153.5 miles more than 2 times the length of Interstate 15 from southern California to northern Montana. Let m be the length of Interstate 15. Which expression can you use to represent the length of Interstate 90?

(A)
$$2m + 153.5$$
 (B) $2m - 153.5$ (C) $153.5 - 2m$ (D) $153.5m + 2$

①
$$153.5m + 2$$

The word times means multiplication. So, multiply 2 and m. 2m + 153.5

$$-2m + 153.5$$

The phrase *more than* means addition. So, add 2m and 153.5.

The correct answer is (A).

Real-Life Application

You plant a cypress tree that is 10 inches tall. Each year, its height increases by 15 inches.

- a. Make a table that shows the height of the tree for 4 years. Then write an expression for the height after t years.
- b. What is the height after 9 years?
- a. The height is increasing, so add 15 each year as shown in the table.

Year, t	Height (inches)	NATh are dis 0 dh a
0	10 🕶	When t is 0, the height is 10 inches.
1	10 + 15(1) = 25	neight is 10 inches.
2	10 + 15(2) = 40	
3	10 + 15(3) = 55	
4	10 + 15(4) = 70	
	<u> </u>	
You can s	see that an expression is	10 + 15t.

So, the height after year t is 10 + 15t.

b. Evaluate 10 + 15t when t = 9.

$$10 + 15t = 10 + 15(9) = 145$$

After 9 years, the height of the tree is 145 inches.



Assignment

Complete problems 8, 12, 16, 20, 26, 28, 30, & 34 on pages 122 - 123 in your Big Ideas Text Book.

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Homework

In your Big Ideas Record and Practice Journal page 64.

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