Start Thinking!

For use before Activity 3.2

Many common words have mathematical meanings. What operation do you think of when you hear these phrases?

Bigger than   Older than   Higher than

Think of some other everyday phrases that have mathematical meanings. Try to write a phrase for each operation: addition, subtraction, multiplication, and division.

Activity 3.2

Warm Up

For use before Activity 3.2

Evaluate the expression when $x = 2$ **and** $y = 6.$

1. $x + 8$

2. $12 - y$

3. $x \bullet y$

4. $x + y$

5. $\dfrac{y}{x}$

6. $y - x$

Start Thinking!
For use before Lesson 3.2

Explain what this sentence means:
"To get to school, Susie walks 5 blocks less than Bill."

Can the sentence be written mathematically?

If you knew how many blocks Bill walked to school, how would you figure out how many blocks Susie walked?

Lesson 3.2

Warm Up
For use before Lesson 3.2

Write the phrase as an expression.

1. the sum of 12 and a number t

2. a number h times 8

3. the difference of 7 and a number f

4. 11 decreased by a number w

5. a number n divided by 2

6. twice a number p

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Write the phrase as an expression.

1. 6 more than 4

2. 7 less than 15

3. 3 times a number x

4. the quotient of a number m and 4

5. the product of 8 and a number p

6. twice a number x

7. a number y decreased by 10

8. 7 fewer than a number k

9. the total of a number c and 3

10. the difference of 11 and a number d

11. Describe and correct the error in writing the phrase as an expression.

$$\times \quad \boxed{\begin{array}{l} \text{12 less than a number } x \\ 12 - x \end{array}}$$

Write two phrases for the expression.

12. $x + 8$

13. $20 - n$

Write the phrase as an expression. Then evaluate when $x = 2$ and $y = 10$.

14. twelve more than the product of 5 and a number x

15. the quotient of a number x and the sum of 3 and 7

16. 17 less than the quotient of 200 and a number y

17. 15 decreased by the product of a number x and 4

18. You eat five slices of bread. Your friend eats two slices fewer than you eat. Write an expression that describes the number of slices your friend eats.

19. Your uncle is 2 years older than 3 times your age.

   a. You are x years old. Write an expression to describe your uncle's age.

   b. You are 12 years old. How old is your uncle?

Name _____ Date _____

Write the phrase as an expression.

1. 8 more than 5

2. 11 fewer than 24

3. 6 times a number y

4. the quotient of a number n and 7

5. the sum of 8 and a number e

6. twice a number n plus 6

7. a number x decreased by 13

8. 7 less than 3 times a number m

9. the total of a number f and 3

10. the difference of 25 and a number w

11. You have two cats. Each cat has a litter of 6 kittens. Write an expression that describes the total number of cats and kittens you have.

12. The total of your dinner bill plus tip is $16.00. You left a $3.20 tip. Write an expression to describe this situation.

Write the phrase as an expression. Then evaluate when $x = 8$ and $y = 20$.

13. fifteen more than the quotient of 24 and a number x

14. the sum of a number y and 30, all divided by 5

15. the product of 2 and the sum of a number x and 9

16. In the sequence, 2, 5, 8, 11, …, which expression describes the number after x? Explain your choice.

   A. $x + 3$ **B.** $x - 3$ **C.** $3x$ **D.** $x \div 3$

17. You are baking cookies.

   a. You make one and one-half batches of cookies. How many eggs have you used?

   b. Each batch makes 24 cookies. You make x batches of cookies, but eat 5 cookies as you are baking. Write an expression for the number of cookies that you have.

| **Recipe** |
| 2 cups sugar |
| $1\frac{1}{2}$ cups flour |
| 2 eggs |

   c. You make 3 batches of cookies to make bags for a sale. You put 5 cookies in each bag. Given $14(5) + 2 = 3(24)$, what do the terms represent?

Name_____ Date _____

3.2 Enrichment and Extension

Math Joke

Fill in the squares with the missing phrases.

1. Fifteen _____ the _____ 15 and 5 is 5.

   First phrase

   | | ▢ | | | | | | | | ▢ | |

   Second phrase

   | | | | | | ▢ | | | | | |

2. Thirty ____ the ____ 18 and 2 is 46.

   First phrase

   | | | | ▢ | | | | |

   Second phrase

   | | | | | | | | | ▢ | | | |

3. Six ____ the ____ 8 and 3 is 18.

   First phrase

   | ▢ | | | | | | | ▢ |

   Second phrase

   | | | | | | | ▢ | | | |

Rearrange the shaded letters to answer the following question.

What did the zero say to the eight?

| | | | | | | | | |

Name _____ Date _____

3.2 Puzzle Time

What's A Mouse's Favorite Television Show?

Write the letter of each answer in the box containing the exercise number.

Write the phrase as an expression.

1. 4.2 less than 7.6

2. $27\frac{1}{5}$ divided by 9

3. the total of $7\frac{1}{6}$ and $13\frac{1}{8}$

4. 3 times a number x

5. $10\frac{1}{3}$ subtracted from a number x

6. the quotient of 17 and a number x

7. the difference of a number x and 6.4

8. a number x squared

9. 15.6 times a number x

Write the phrase as an expression. Then, evaluate the expression when $x = 4$ and $y = 24$.

10. the sum of a number x and $19\frac{3}{5}$

11. a number x multiplied by 14.2

12. 5 less than a quotient of a number y and 2

13. the sum of a number x and 8, all divided by 3

14. 8.6 more than the product of 3 and a number y

15. Your friend has read 6 more than twice as many pages as your sister has read. Let x be the number of pages your sister has read. Write an expression for the number of pages your friend has read.

Answers

R. $7\frac{1}{6} + 13\frac{1}{8}$ **E.** $15.6x$

N. $3x$ **U.** x^2

F. $7.6 - 4.2$ **S.** $x - 6.4$

E. $17 \div x$ **A.** $x - 10\frac{1}{3}$

U. $27\frac{1}{5} \div 9$ **O.** $23\frac{3}{5}$

T. 4   **F.** 80.6

Q. $2x + 6$ **O.** 56.8

L. 7

7	15	2	9	5	12		10	1		14	11	3	13	8	4	6