LESSON 11

Representing Situations

Review It!

When you represent situations, translate key words into symbols for operations:

addition sum, increase, more than
subtraction difference, decrease, less than
multiplication product, times, double
division quotient, divided by, equal groups

Algebra

What is a math sentence for the following word sentence?
The product of 3 and the sum of a number and 2 is 27.

Step 1 Look for key words.

The product of 3 and the sum of a number and 2 is 27.

THINK "Sum" means *add*.

THINK "Is" means *equals*.

THINK "Product" means *multiply*.

Step 2 Translate each word expression.

Write "sum of a number and 2" as n ____ 2.

Write "product of 3 and the sum" as 3 ____ sum.

Write "equals" as ____

Step 3 Put the expressions together. 3 ____ (n ____ 2) ____ 27

So, the math expression for "the product of 3 and the sum of a number and 2 is 27" is _____ or $3(n + 2) = 27$.

Try It! Write a math equation for each word sentence. Use n for "a number."

Ask Yourself

1. Ten more than a number is 23. $n+10=23$
2. Eight less than a number is 15. $n-8=15$
3. Five times a number equals 45. $5n=45$
4. A number divided by 7 is 13. $n \div 7=13$
5. Three less than the product of a number and 4 is 33. $4n-3=33$
6. Nine less than the quotient of a number and 5 is 18. $\frac{n}{5}-9=18$
7. Fifteen less than twice a number is 11. $2n-15=11$
8. Nine more than a number divided by 16 is 15. $\frac{n}{16}+9=15$
9. Fifteen more than 8 times a number is 39. $8n+15=39$
10. Two times the sum of a number and 6 is 26. $2(n+6)=26$
11. Five times the difference of a number and 3 is 20. $5(n-3=20$

1. What does "more than" mean? add, or subtract?
2. What does "less than" mean? add, or subtract?

Solve.

12. Martha took \$50 to the grocery store. She spent d dollars for groceries, and had \$6 left. Write a math equation for the situation. $50-d=6$

12. What does "spent" mean? add, or subtract?

13. Yan bought a bag of oranges for \$6.30. The oranges cost \$0.55 per pound, p. Write a math equation for the situation. $.55p=6.30$

Algebra

On Your Own!

Circle the best answer for each question.

In questions 1-4, find the math expression that models the word expression.

1. the product of a number and 7

   A. $n + 7$
   B. $7n$
   C. $n \div 7$
   D. $n - 7$

2. ten less than a number

   A. $n + 10$
   B. $10n$
   C. $n - 10$
   D. $10 - n$

3. five more than the product of a number and 12

   A. $12n + 5$
   B. $n \div 12 + 5$
   C. $5n + 7$
   D. $12n - 5$

4. Scott's mother baked n cookies. She divided them equally among her 4 children. Scott ate 2 of his cookies.

   A. $4n - 2$
   B. $n \div 2 - 4$
   C. $n \div 4 + 2$
   D. $n \div 4 - 2$

In questions 5-8, find the math sentence that models the word sentence.

5. Six more than a number is 24.

   A. $6n = 24$
   B. $n + 24 = 6$
   C. $n - 6 = 24$
   D. $n + 6 = 24$

6. Eight less than 3 times a number is 7.

   A. $n \div 8 - 3 = 7$
   B. $3n + 8 = 7$
   C. $3n - 8 = 7$
   D. $8n - 3 = 7$

7. Twelve less than the quotient of a number and 2 is 10.

   A. $n \div 12 - 2 = 10$
   B. $n \div 2 - 12 = 10$
   C. $2n - 12 = 10$
   D. $n \div 2 + 12 = 10$

8. Nancy read n pages each day. Katy read 3 more pages than Nancy. Katy read 48 pages in 6 days.

   A. $6(n + 3) = 48$
   B. $6n + 3 = 48$
   C. $6(n - 3) = 48$
   D. $3(n + 6) = 48$

9. Gina took \$85 to buy groceries. She spent d dollars at the store. When she got home she had \$13. Write a math sentence for the situation.

$85 - d = 13$

10. Paul earns \$9 per hour. He wants to know how much he can earn in h hours. Write a math expression for the situation.

$9h$

Math Words

Fill in the blanks.

11. The word "sum" means add.
12. The word "product" means multiply.
13. The word "decrease" means subtract.
14. The word "quotient" means divide.