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Equations and Inequalities

D.2.2.1 D.2.2.2

Example

What is the value of x in the following equation?

$$4x = 28$$

- A $x = 7$
- B $x = 24$
- C $x = 32$
- D $x = 112$

Example

Which symbol makes the number sentence true?

$$32 - 17 \bullet 9 + 7$$

- A +
- B =
- C >
- D <

Thinking It Through

Solve —*Translate It* Sometimes it helps to think of an equation in words:

4 times some number is equal to 28

Use the inverse of multiplication, division, to find the solution:
 $28 \div 4 = x$. So $x = 7$, choice A.

Assemble Check the answer by substituting 7 for x in the original equation: $4 \times 7 = 28$, so the solution is correct.

Thinking It Through

Solve Evaluate each side of the \bullet to find which symbol to use:

$$\begin{aligned} 32 - 17 &= 15 \\ 9 + 7 &= 16 \end{aligned}$$

Now, rewrite as $15 \bullet 16$

Since 15 is *less than* 16, the answer is $<$, choice D.

Review

- You can use an inverse operation to solve an equation. Inverse operations undo each other. Multiplication and division are inverse operations, as are addition and subtraction.
- A **variable** is a letter or symbol that represents an unknown number.
- An **inequality** is a mathematical sentence that contains a symbol that shows that the terms on either side of the symbol are unequal. $<$ means the first quantity is less than the second (such as $4 < 5$); $>$ means the first quantity is greater than the second (such as $5 > 4$).

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DIRECTIONS Read and solve each question. Then circle the letter of the best answer.

1. Which symbol makes the equation true?

$$32 \bullet 4 = 8$$

- A +
- B -
- C \times
- D \div

2. What is the value of x in this equation?

$$6x = 54$$

- A $x = 6$
- B $x = 8$
- C $x = 9$
- D $x = 324$

3. Which symbol makes the number sentence true?

$$27 + 25 \bullet 8 \times 6$$

- A =
- B >
- C <
- D \times

4. What is the value of x in this equation?

$$725 - x = 387$$

- A $x = 338$
- B $x = 348$
- C $x = 438$
- D $x = 448$



Try subtracting 387 from 725.