

**EXAMPLE 3****TAKS PRACTICE: Multiple Choice**

Which equation represents Step 2 in the solution process?

Step 1 $6x - 5(x - 4) = 31$

Step 2

Step 3 $x + 20 = 31$

Step 4 $x = 11$

ELIMINATE CHOICES

You can eliminate choices B and C because -5 has not been distributed to *both* terms in the parentheses.

A $6x - 5x - 20 = 31$

B $6x - 5x - 4 = 31$

C $6x - 5x + 4 = 31$

D $6x - 5x + 20 = 31$

Solution

In Step 2, the distributive property is used to simplify the left side of the equation. Because $-5(x - 4) = -5x + 20$, Step 2 should be $6x - 5x + 20 = 31$.

▶ The correct answer is D. **A** **B** **C** **D**

GUIDED PRACTICE for Examples 1, 2, and 3

Solve the equation. Check your solution.

1. $9d - 2d + 4 = 32$

2. $2w + 3(w + 4) = 27$

3. $6x - 2(x - 5) = 46$

USING RECIPROCALLS Although you can use the distributive property to solve an equation such as $\frac{3}{2}(3x + 5) = -24$, it is easier to multiply each side of the equation by the reciprocal of the fraction.

EXAMPLE 4**Multiply by a reciprocal to solve an equation**

Solve $\frac{3}{2}(3x + 5) = -24$.

$\frac{3}{2}(3x + 5) = -24$

Write original equation.

$\frac{2}{3} \cdot \frac{3}{2}(3x + 5) = \frac{2}{3}(-24)$

Multiply each side by $\frac{2}{3}$, the reciprocal of $\frac{3}{2}$.

$3x + 5 = -16$

Simplify.

$3x = -21$

Subtract 5 from each side.

$x = -7$

Divide each side by 3.

GUIDED PRACTICE for Example 4

Solve the equation. Check your solution.

4. $\frac{3}{4}(z - 6) = 12$

5. $\frac{2}{5}(3r + 4) = 10$

6. $-\frac{4}{5}(4a - 1) = 28$