EXAMPLE 2 **Write and use a linear equation**

RESTAURANT During one shift, a waiter earns wages of $30 and gets an additional 15% in tips on customers' food bills. The waiter earns $105. What is the total of the customers' food bills?

Solution

Write a verbal model. Then write an equation. Write 15% as a decimal.

Income (dollars)	=	Wages (dollars)	+	Percent for tips	·	Food bills (dollars)
105	=	30	+	0.15	·	x

$105 = 30 + 0.15x$ **Write equation.**

$75 = 0.15x$ **Subtract 30 from each side.**

$500 = x$ **Divide each side by 0.15.**

▶ The total of the customers' food bills is $500.

✓ **GUIDED PRACTICE**   **for Examples 1 and 2**

Solve the equation. Check your solution.

1. $4x + 9 = 21$ **2.** $7x - 41 = -13$ **3.** $-\dfrac{3}{5}x + 1 = 4$

4. REAL ESTATE A real estate agent's base salary is $22,000 per year. The agent earns a 4% commission on total sales. How much must the agent sell to earn $60,000 in one year?

TAKS

EXAMPLE 3   **TAKS PRACTICE: Multiple Choice**

What is the solution of $4p + 15 = 7p - 3$?

ⓐ -6 ⓑ -4 ⓒ 4 ⓓ 6

Solution

$4p + 15 = 7p - 3$ **Write original equation.**

$15 = 3p - 3$ **Subtract 4p from each side.**

$18 = 3p$ **Add 3 to each side.**

$6 = p$ **Divide each side by 3.**

▶ The correct answer is D. ⓐ ⓑ ⓒ ⓓ

CHECK $4p + 15 = 7p - 3$ **Write original equation.**

$4(6) + 15 \stackrel{?}{=} 7(6) - 3$ **Substitute 6 for p.**

$24 + 15 \stackrel{?}{=} 42 - 3$ **Multiply.**

$39 = 39 ✓$ **Solution checks.**