Name: Key

2.3 Apply

Solve each problem by working backward.

1. A number is divided by 3, and then 4 is added to the quotient. The result is 8. Find the number.

$\frac{x}{3} + 4 = 8$ (12)

2. A number is multiplied by 5, and then 3 is subtracted from the product. The result is 12. Find the number.

$5x - 3 = 12$ (3)

3. Eight is subtracted from a number, and then the difference is multiplied by 2. The result is 24. Find the number.

$2(x - 8) = 24$ (20)

4. CAR RENTAL Angela rented a car for \$29.99 a day plus a one-time insurance cost of \$5.00. Her bill was \$124.96. For how many days did she rent the car?

$29.99x + 5.00 = 124.96$

(4 days)

5. MONEY Mike withdrew an amount of money from his bank account. He spent one fourth for gasoline and had \$90 left. How much money did he withdraw?

$\frac{3}{4}n = 90$ or $n - \frac{1}{4}n = 90$

(\$120)

Solve each equation. Check your solution.

6. $5x + 16 = 51$ (7)

7. $0.6x - 1.5 = 1.8$ (5.5)

8. $\frac{7}{8}p - 4 = 10$ (16)

9. $\frac{4b + 8}{-2} = 10$ (-7)

10. $-4 = \frac{7x - (-1)}{-8}$ ($\frac{31}{7}$)

11. HUMAN HEIGHT It is a commonly used guideline that for the average American child, their maximum adult height will be about twice their height at age 2. Suppose that Micah's adult height fits the following equation $a = 2c - 1$, where a represents his adult height and c represents his height at age 2. At age 2 Micah was 35 inches tall. What is Micah's adult height? Write and solve an equation.

$a = 2c - 1$

adult height ↑ height at age 2 ↑

$a = 2(35) - 1$

$a = 69$ inches

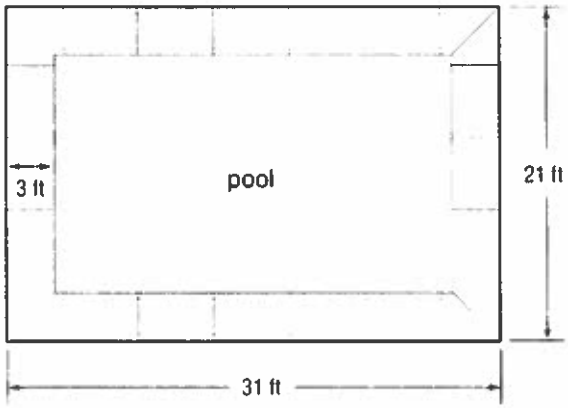
5'9"

12. TEMPERATURE The formula for converting a Fahrenheit temperature to a Celsius temperature is $C = \frac{F - 32°}{1.8}$. Find the equivalent Celsius temperature for 68°F.

$C = \frac{68 - 32}{1.8}$

$C = 20°$

13. GEOMETRY A rectangular swimming pool is surrounded by a concrete sidewalk that is 3 feet wide. The dimensions of the rectangle created by the sidewalk are 21 feet by 31 feet.



a. Find the length and width of the pool.

25ft 15ft

b. Find the area of the pool.

375 ft²

c. Write and solve an equation to find the area of the sidewalk in square feet.

Area of entire shape − Area of pool = Area of sidewalk

$21(31) - (375) = x$

$651 - 375$

276 ft²