Using the Simple Interest Formula and the Distance Formula

A formula is an equation commonly used to express a specific mathematical relationship.

A. Simple Interest Formula \( I = P \cdot r \cdot t \)

Example 1  Solve using the simple interest formula.

a) Find \( I \) when \( P = 1500, \ r = 0.008, \) and \( t = 5 \)

b) How much interest will be owed on a $25,000 5-year loan at 7.5% simple interest?

c) What is the principal on a 4-year 6% loan if the simple interest was $2040?

d) What is the simple interest rate on a 2-year loan if the amount repaid is the $4000 principal plus $640 interest?

B. Distance Formula \( d = r \cdot t \)

Example 2  Solve using the distance formula.

a) Find \( d \) when \( r = 8.5 \) and \( t = 15 \).

b) Find the distance traveled by Breanna if she drives for 4.5 hours at 65 mph. How fast will she need to drive if she wishes to make the trip in 4 hours?
Example 3  Solve.

a) Find the perimeter and the area of a parallelogram 6 feet long, 4 feet wide with a height of 3 feet.

b) Gil is installing a backyard patio using 6” x 6” square pavers. If the patio is in the shape of a triangle with a base of 14’ and a height of 10’, approximately how many pavers will he need.

c) A jacuzzi in the shape of a right circular cylinder is 4 feet deep and has a diameter of 12 feet. What is the volume of the jacuzzi?

d) Rose is planting a circular flower garden with 1 plant per square foot. If the diameter of the flower bed is 12 ft, how many plants does she need to purchase? If she also plans to use edging around the border, how many feet of edging does she need?
Solve for a certain variable in a formula.

1) Idea is to isolate the variable that you are solving for on the left side of the equation.
2) Use the addition property and/or the multiplication property to solve for the variable.

Example 4  Solve for the indicated variable.

a)  Solve $3x - 2y = 12$ for $y$

b)  Solve $R = \frac{1}{3}ab$ for $b$

c)  Solve $-6x + 2y - 8 = 0$ for $y$

d)  Solve $4x = -3y + 9$ for $y$