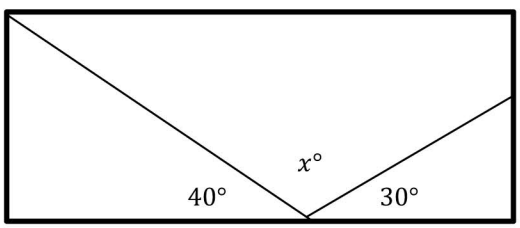
Name _____ Date _____

One-Step Problems in the Real World

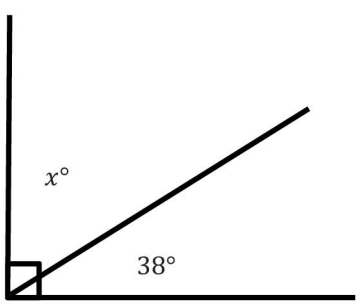
Write an equation, and solve for the missing angle in each question.

1. Alejandro is repairing a stained glass window. He needs to take it apart to repair it. Before taking it apart, he makes a sketch with angle measures to put it back together.

   Write an equation, and use it to determine the measure of the unknown angle.

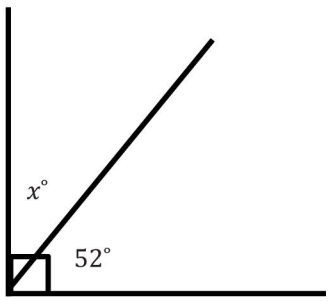


2. Hannah is putting in a tile floor. She needs to determine the angles that should be cut in the tiles to fit in the corner. The angle in the corner measures $90°$. One piece of the tile will have a measure of $38°$. Write an equation, and use it to determine the measure of the unknown angle.

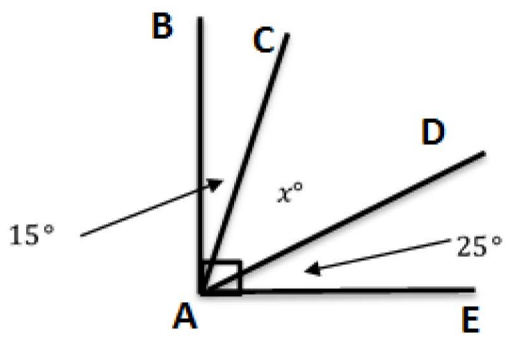


Write and solve an equation for each problem.

1. Solve for x.

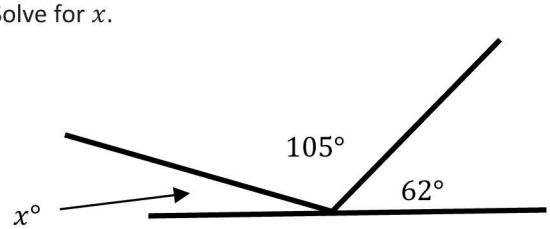


2. $\angle BAE$ measures $90°$. Solve for x.

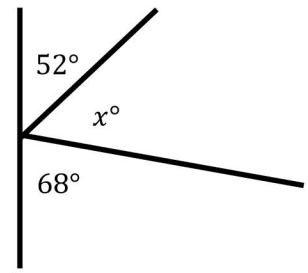


3. Thomas is putting in a tile floor. He needs to determine the angles that should be cut in the tiles to fit in the corner. The angle in the corner measures $90°$. One piece of the tile will have a measure of $24°$. Write an equation, and use it to determine the measure of the unknown angle.

4. Solve for x.



5. Aram has been studying the mathematics behind pinball machines. He made the following diagram of one of his observations. Determine the measure of the missing angle.



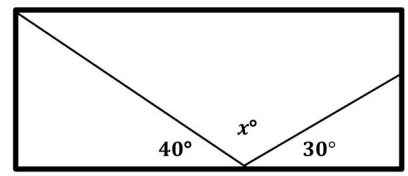
6. The measures of two angles have a sum of $90°$. The measures of the angles are in a ratio of $2:1$. Determine the measures of both angles.

7. The measures of two angles have a sum of $180°$. The measures of the angles are in a ratio of $5:1$. Determine the measures of both angles.

Write an equation, and solve for the missing angle in each question.

1. **Alejandro is repairing a stained glass window. He needs to take it apart to repair it. Before taking it apart, he makes a sketch with angle measures to put it back together.**

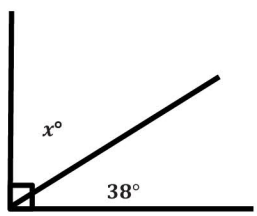
   Write an equation, and use it to determine the measure of the unknown angle.



$$40° + x° + 30° = 180°$$
$$x° + 40° + 30° = 180°$$
$$x° + 70° = 180°$$
$$x° + 70° - 70° = 180° - 70°$$
$$x° = 110°$$

The missing angle measures $110°$.

2. **Hannah is putting in a tile floor. She needs to determine the angles that should be cut in the tiles to fit in the corner. The angle in the corner measures $90°$. One piece of the tile will have a measure of $38°$. Write an equation, and use it to determine the measure of the unknown angle.**

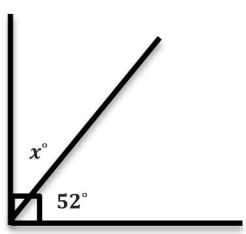


$$x° + 38° = 90°$$
$$x° + 38° - 38° = 90° - 38°$$
$$x° = 52°$$

The unknown angle is $52°$.

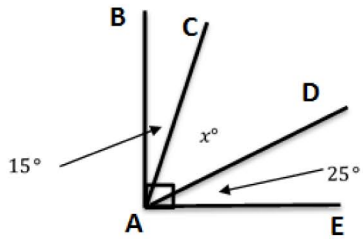
Write and solve an equation for each problem.

1. **Solve for x.**



$$x° + 52° = 90°$$
$$x° + 52° - 52° = 90° - 52°$$
$$x° = 38°$$

2. $\angle BAE$ measures $90°$. Solve for x.



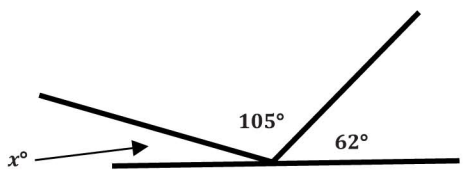
$$\begin{aligned} 15° + x° + 25° &= 90° \\ 15° + 25° + x° &= 90° \\ 40° + x° &= 90° \\ 40° - 40° + x° &= 90° - 40° \\ x° &= 50° \end{aligned}$$

3. Thomas is putting in a tile floor. He needs to determine the angles that should be cut in the tiles to fit in the corner. The angle in the corner measures $90°$. One piece of the tile will have a measure of $24°$. Write an equation, and use it to determine the measure of the unknown angle.

$$\begin{aligned} x° + 24° &= 90° \\ x° + 24° - 24° &= 90° - 24° \\ x° &= 66° \end{aligned}$$

The unknown angle is $66°$.

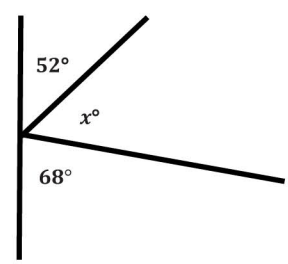
4. Solve for x.



$$\begin{aligned} x° + 105° + 62° &= 180° \\ x° + 167° &= 180° \\ x° + 167° - 167° &= 180° - 167° \\ x° &= 13° \end{aligned}$$

5. Aram has been studying the mathematics behind pinball machines. He made the following diagram of one of his observations. Determine the measure of the missing angle.

$$\begin{aligned} 52° + x° + 68° &= 180° \\ 120° + x° &= 180° \\ 120° + x° - 120° &= 180° - 120° \\ x° &= 60° \end{aligned}$$



6. The measures of two angles have a sum of $90°$. The measures of the angles are in a ratio of $2:1$. Determine the measures of both angles.

$$\begin{aligned} 2x° + x° &= 90° \\ 3x° &= 90° \\ \frac{3x°}{3} &= \frac{90}{3} \\ x° &= 30° \end{aligned}$$

The angles measure $30°$ and $60°$.

7. The measures of two angles have a sum of $180°$. The measures of the angles are in a ratio of $5:1$. Determine the measures of both angles.

$$5x° + x° = 180°$$
$$6x° = 180°$$
$$\frac{6x°}{6} = \frac{180}{6}$$
$$x° = 30°$$

The angles measure $30°$ and $150°$.