

Name _____

Date _____

Finding the Components of a Vector - Guided Lesson Explanation

All the problems follow the same pattern. You can determine the x and y coordinates using the known formulas:

$$x = r \cos \theta \quad y = r \sin \theta$$

Explanation#1

$$x = r \cos \theta \quad y = r \sin \theta$$

$$r = 12\text{m},$$

$$x = r \cos 25^\circ$$

$$x = 12 \times .906$$

$$x = 10.88$$

$$y = r \sin 25^\circ$$

$$y = 12 \times .422$$

$$y = 5.07$$

Answer is: $x = 10.88$, $y = 5.07$

Explanation#2

$$x = r \cos \theta \quad y = r \sin \theta$$

$$r = 22\text{m},$$

$$x = r \cos 75^\circ$$

$$x = 22 \times .258$$

$$x = 5.69$$

$$y = r \sin 75^\circ$$

$$y = 22 \times .965$$

$$y = 21.25$$

Answer is: $x = 5.69$, $y = 21.25$



Name _____

Date _____

Explanation#3

Working once again with: $x = r \cos \theta$ $y = r \sin \theta$

$$r = 26\text{m,}$$

$$x = r \cos 35^\circ$$

$$x = 26 \times .819$$

$$x = 21.30$$

$$y = r \sin 35^\circ$$

$$y = 26 \times .573$$

$$y = 14.91$$

$$x = 21.30 \quad , \quad y = 14.91$$

