## Answer on Question 64216, Physics, Astronomy, Astrophysics

## **Question:**

Vector A has a magnitude of 35.1 m/s and a direction of 215 degrees. What are its x-and y- components?

## Solution:



We can find *x*- and *y*- components of vector *A* from the geometry:

$$A_x = A\cos\theta,$$
$$A_y = A\sin\theta,$$

here, A is the magnitude of the vector,  $\theta$  is the angle that vector A makes with the positive x-axis.

Then, we can calculate  $A_x$  and  $A_y$  (since vector A lies in the third quadrant its x- and y- components will be negative as shown in figure above):

$$A_x = A\cos\theta = 35.1 \frac{m}{s} \cdot \cos 215^\circ = -28.75 \frac{m}{s}.$$
$$A_y = A\sin\theta = 35.1 \frac{m}{s} \cdot \sin 215^\circ = -20.13 \frac{m}{s}.$$

## Answer:

 $A_x = -28.75 \ \frac{m}{s}, A_y = -20.13 \ \frac{m}{s}.$ 

Answer provided by https://www.AssignmentExpert.com