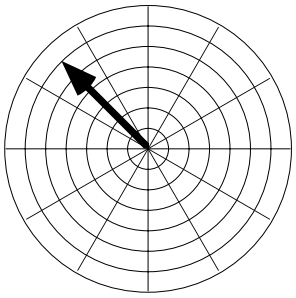
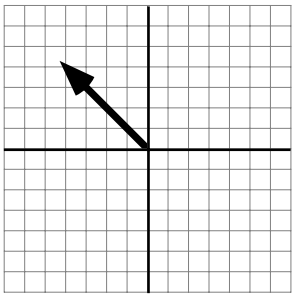
PhyzJob: New Year's Resolutions
From Polar to Rectangular Coordinates

FELIX

1. Draw the vectors given on the polar graph (left).
2. Convert the polar components to rectangular components.
3. Draw the vector on the rectangular graph (right).

Ex.





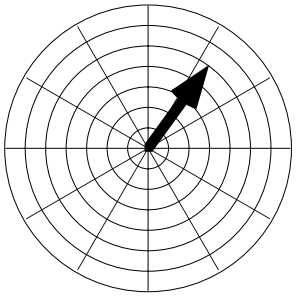
w = (6m; 135°)

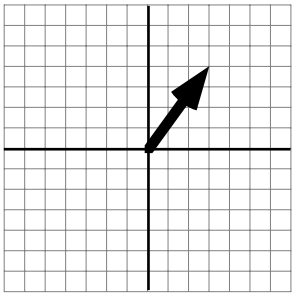
$w_x = w \cdot \cos\theta$
$w_x = 6m \cdot \cos 135°$
$w_x = -4.2m$

$w_y = w \cdot \sin\theta$
$w_y = 6m \cdot \sin 135°$
$w_y = 4.2m$

w = (–4.2m, 4.2m)

1.





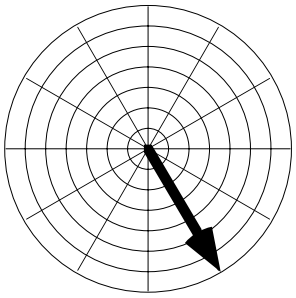
x = (5m; 53°)

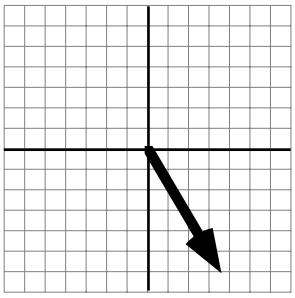
$x_x = x \cdot \cos\theta$
$x_x = 5.0m \cdot \cos 53°$
$x_x = 3.0m$

$xy = x \cdot \sin\theta$
$xy = 5.0m \cdot \sin 53°$
$xy = 4.0m$

x = (3.0m, 4.0m)

2.





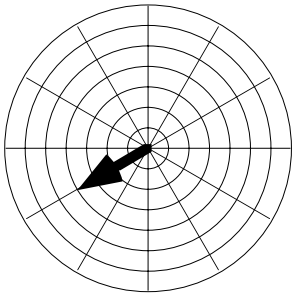
y = (7m; 300°)

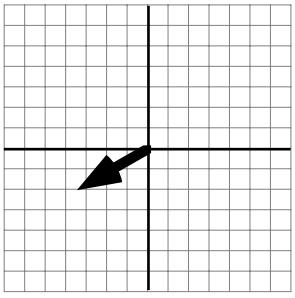
$y_x = y \cdot \cos\theta$
$y_x = 7.0m \cdot \cos 300°$
$y_x = 3.5m$

$y_y = y \sin\theta$
$y_y = 7.0m \sin 300°$
$y_y = -6.1m$

y = (3.5m, –6.1m)

3.





z = (4m; 210°)

$z_x = z \cdot \cos\theta$
$z_x = 4.0m \cdot \cos 210°$
$z_x = -3.5m$

$z_y = z \cdot \sin\theta$
$z_y = 4.0m \cdot \sin 210°$
$z_y = -2.0m$

z = (–3.5m, –2.0m)

3. z = (–3.5m, –2.0m)

db