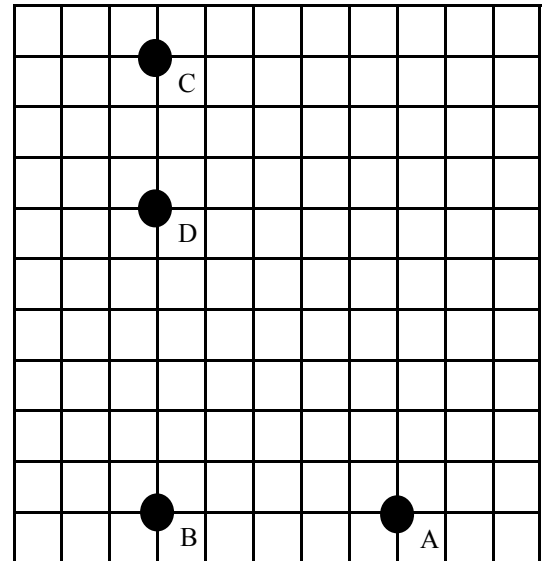


1. The diagram below indicates three positions to which a woman travels. She starts at position **A**, travels 6.0 km to the west to point **B**, then 9.0 km to the north to point **C**. She then backtracks, and travels 3.0 km to the south to point **D**.

- a. In the space provided, diagram the displacement vectors for each segment of the woman's trip.
- b. What is the total displacement of the woman from her initial position, **A**, to her final position, **D**?
- c. What is the total distance traveled by the woman from her initial position, **A**, to her final position, **D**?



2. A plane flies at 300 m/s to the east. The wind is blowing at 35 m/s from the south to the north. What is the actual (resultant) velocity of the plane?

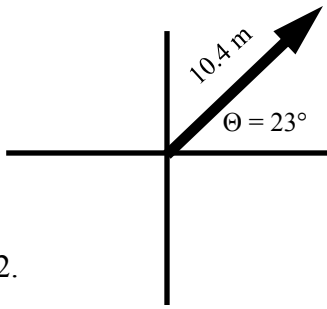
3. You are rowing a boat with a velocity of 4 m/s at an angle of 35 degrees. Resolve this motion into its north and east components.

4. A gazelle runs a distance of 5.0 km west turns and then runs 1.0 km south. Calculate the resultant displacement. (Include the magnitude and angle.)

Vector Addition

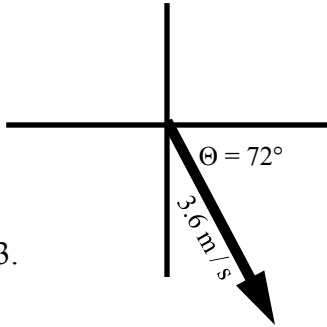
Resolve the vectors using trigonometry. **DO NOT FORGET THE SIGN!!!!!!**

1.



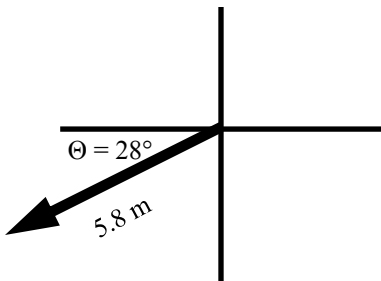
$d_x =$ _____
$d_y =$ _____

2.



$v_x =$ _____
$v_y =$ _____

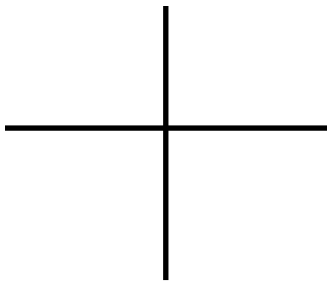
3.



$d_x =$ _____
$d_y =$ _____

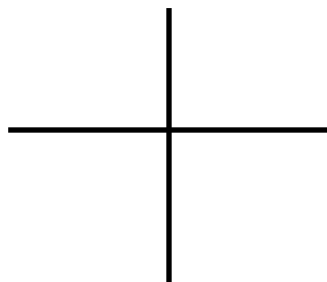
Find the resultant and direction (angle) Draw the vector.

4. $\Delta X = -12$ m $\Delta Y = 2$ m



$R =$ _____
$\theta =$ _____

5. $V_x = -6$ m/s $V_y = -4$ m/s



$R =$ _____
$\theta =$ _____