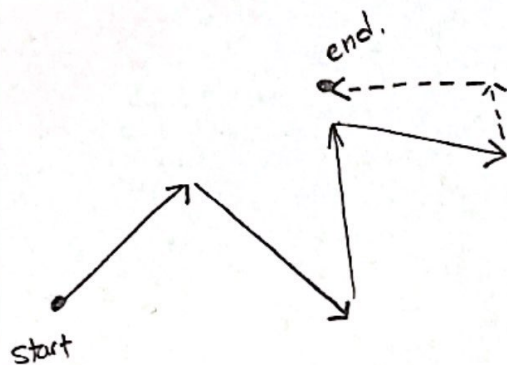


Problem Statement:

What are components of vectors A-D.

Represent the Problem:



Organize Information (Equations, Conversions, Knowns, Unknowns, Assumptions):

$$F_x = |F| \cos \theta \quad |F| = \sqrt{(x)^2 + (y)^2}$$

$$F_y = |F| \sin \theta \quad \theta = \tan^{-1} y/x$$

Vector A: 2337 ft, 45° N of E

Vector B: 2875 ft, 23° S of E

Vector C: 3250 ft, 73° W of W

Vector D: 2235 ft, 4° S of E

$$D_x = 2000 \text{ ft W} \quad D_y = 1000 \text{ ft N}$$

Calculations: (Box your solutions when completed)

$$\text{Vector A: } x_{\text{com}} = 2337 \cos(45) = 1652 \text{ ft}$$

$$y_{\text{com}} = 2337 \sin(45) = 1652 \text{ ft}$$

$$\text{Vector B: } x_{\text{com}} = 2875 \cos(23) = 2646 \text{ ft}$$

$$y_{\text{com}} = 2875 \sin(23) = 1123 \text{ ft}$$

$$\text{Vector C: } x_{\text{com}} = 3250 \cos(73) = 950 \text{ ft}$$

$$y_{\text{com}} = 3250 \sin(73) = 3107 \text{ ft}$$

$$\text{Vector D: } x_{\text{com}} = 2235 \cos(4) = 2224 \text{ ft}$$

$$y_{\text{com}} = 2235 \sin(4) = 155 \text{ ft}$$

$$\text{Vector E: } \text{Mag} = \sqrt{(2000)^2 + (1000)^2} = 2236 \text{ ft}$$

$$\text{angle } \theta = \tan^{-1} \left(\frac{1000}{2000} \right) = 26^\circ \text{ S of E}$$

$$\text{total distance traveled} = 13697 \text{ ft}$$

Evaluate Solution:

- ☐ My units are consistent and cancel throughout the calculations
- ☐ My equations are appropriate for the physical system being evaluated
- ☐ My answer is reasonable given the magnitude of the values in the problem.
- ☐ My final solution answers the problem statement.
- ☐ My final solution is in the appropriate form (vector or scalar)