

Key Words and Phrases

Scalar

Vector

Vector: Magnitude and direction form

Vector: Component form

Vector Addition: Resultant

Vector Addition: Equilibrant

Vector Addition: Head to Tail method

Vector Addition: Mathematical method

Distance

Position

Displacement

Key Equation (1 Key Equation) Please define the variables in the equation.

Fill in the following table using the following equation

$$\text{Final Position} - \text{Initial Position} = \text{Displacement}$$

Initial Position	Final Position	Displacement
0 m	50 m	
10 m		-20 m
	30 m	
	15 m	-10 m
	5 m	45 m

Use the head to tail method to add the all vectors in each row (use graph paper). Solve for the resultant and the equilibrant for each row.

Vector 1	Vector 2	Vector 3	Resultant	Equilibrant
10m @ 0°				
10m @ 0°	20m @ 180°			
10m @ 0°	30m @ 90°			
10m @ 0°	30m @ 90°	10m @ 180°		
10m @ 0°	30m @ 30°			
10m @ 0°	30m @ 15°	30m @ 30°		
10m @ 0°	17.5m @ 15°	12.3m @ 10°		
?	5m @ 0°		6m @ 3°	?

Use the Mathematical method to add all vectors in each row. Solve for the resultant and equilibrant for each row. Express your answers in component form.

Vector 1	Vector 2	Vector 3	Resultant	Equilibrant
10m @ 0°				
10m @ 0°	20m @ 180°			
10m @ 0°	30m @ 90°			
10m @ 0°	30m @ 90°	10m @ 180°		
10m @ 0°	30m @ 30°			
10m @ 0°	30m @ 15°	30m @ 30°		
10m @ 0°	17.5m @ 15°	12.3m @ 10°		
?	5m @ 0°		6m @ 3°	?