

[4] 1. Resolve a displacement vector $\vec{d} = 120\text{km [S } 20^\circ \text{ W]}$ into its vector components.

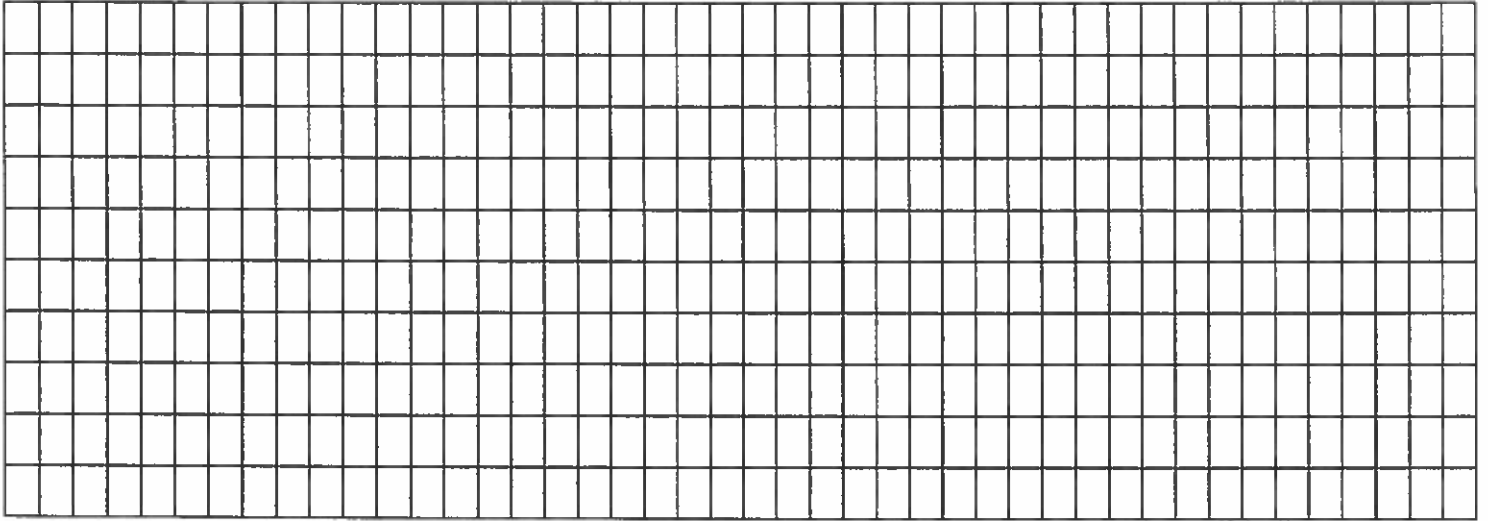
_____ and _____

[4] 2. Find the magnitude and direction of $\vec{a} = [40, -10] \text{ m/s}^2$.

_____ and _____

[4] 3. Sketch a labeled diagram of $\vec{a} + \vec{b} + \vec{c}$. Clearly identify the resultant vector.

$$\vec{a} = [4, -1] \text{ m}, \vec{b} = [-2, 5] \text{ m}, \vec{c} = [1, -6] \text{ m}$$



Resultant vector in vector notation: _____

[4] 4. Consider a truck that moves with velocity 65 km/h [N] and a car that moves with velocity 109 km/h [S]. What is the velocity of the car relative to the truck?

Remember, your full solution must include a coordinate system and your final answer has to include units and direction.