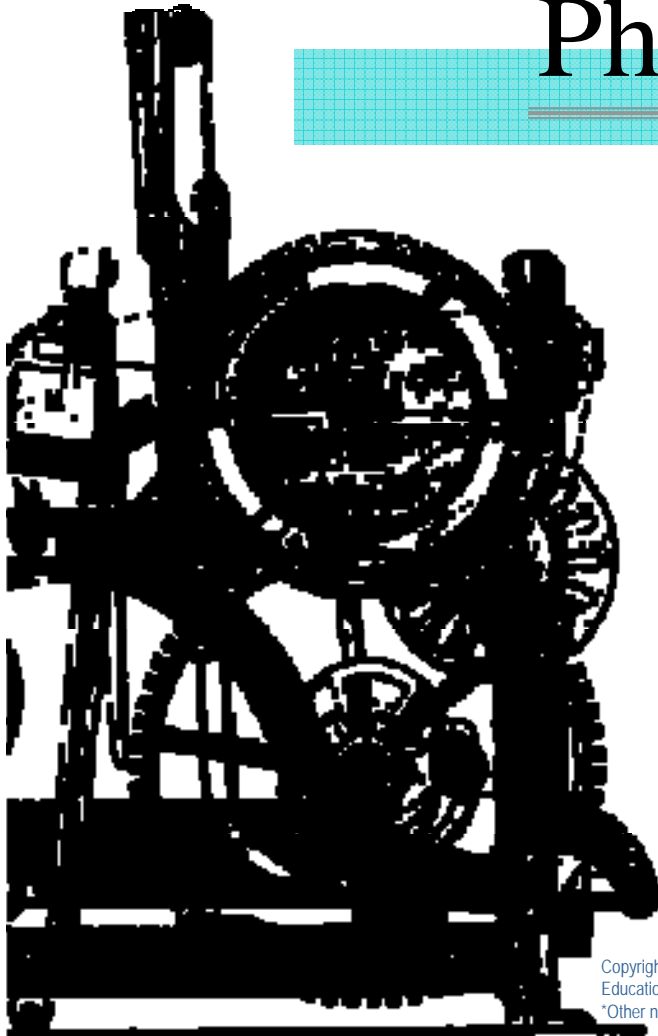


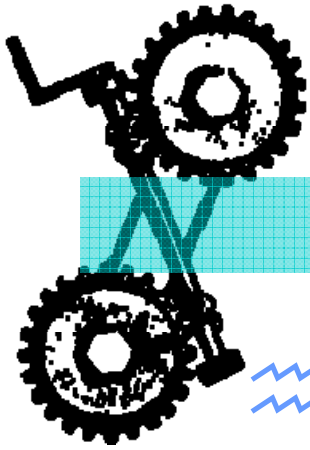
Physics Topics



Vectors

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Phabulous Physics: Vectors



Vectors



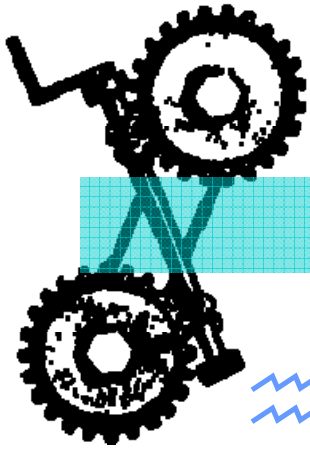
A vector is a quantity that involves both magnitude and direction.

- 55 mph north
- A downward force of 3 Newtons



A scalar is a quantity that does not involve direction.

- 55 mph
- 18 cm long

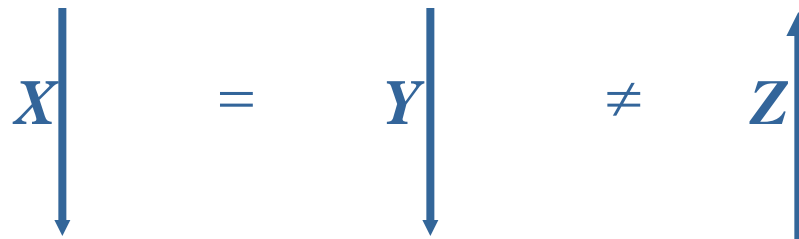


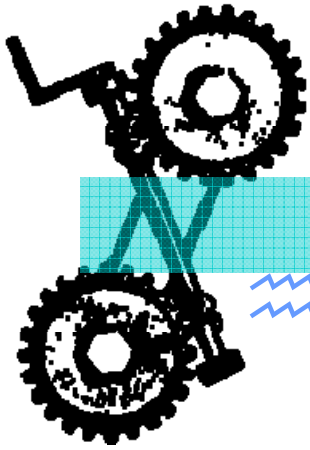
Vector Notation

⚡ Vectors are often identified with arrows in graphics and labeled as follows:



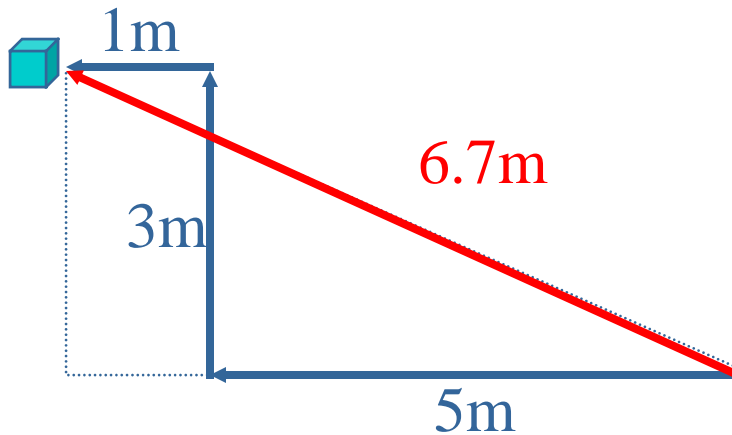
Vector A represents motion 10 cm to the right.





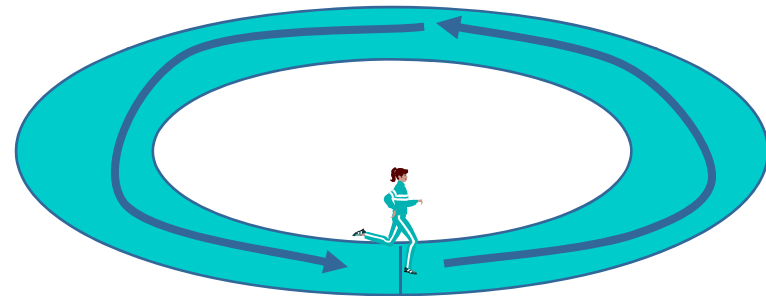
Displacement

Displacement is an object's change in position. Distance is the total length of space traversed by an object.



$$\text{Displacement} = \sqrt{(6m)^2 + (3m)^2} = 6.7 m$$

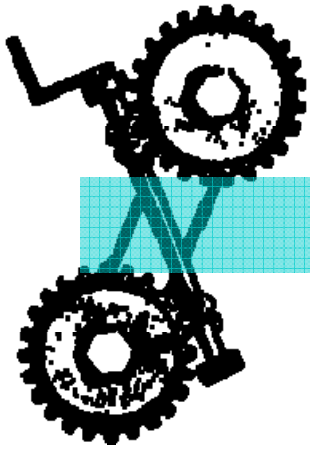
$$\text{Distance} = 5m + 3m + 1m = 9 m$$



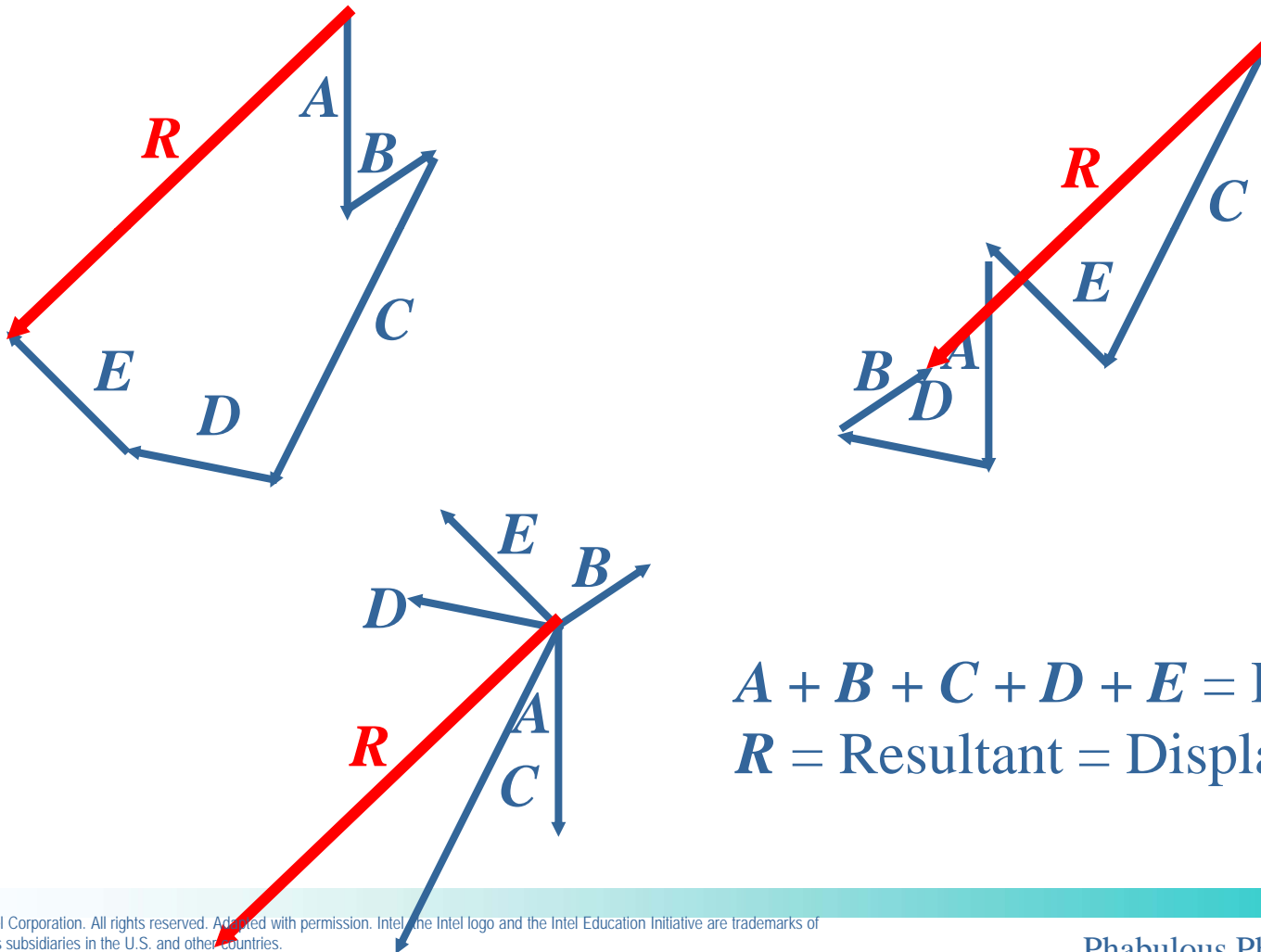
$$\frac{\text{Start}}{\text{Finish}} = 500 m$$

$$\text{Displacement} = 0 m$$

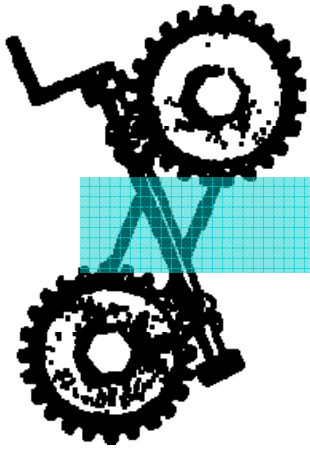
$$\text{Distance} = 500 m$$



Vector Addition



$$A + B + C + D + E = \text{Distance}$$
$$R = \text{Resultant} = \text{Displacement}$$



Rectangular Components

