

Answer on Question #56260, Physics / Mechanics | Relativity

15 if two vectors are represented in magnitude and direction by adjacent sides of a parallelogram the resultant is represented in magnitude and direction by the \_\_\_\_\_ drawn from the origin of the vectors

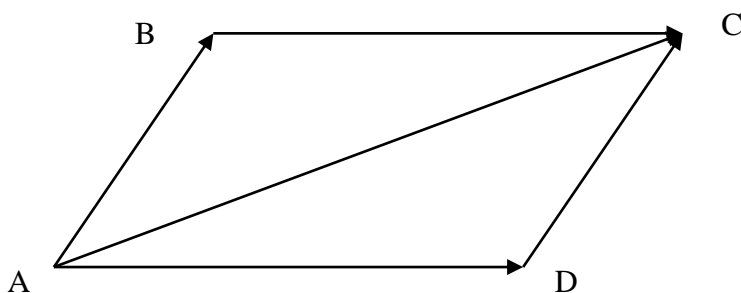
vertices

diagonal

two sides

remaining side

**Solution:**



Two vectors are represented by adjacent sides AB and AD. Since opposite sides of parallelogram are equal ( $AD = BC$ ), thus  $\vec{AB} + \vec{AD} = \vec{AB} + \vec{BC} = \vec{AC}$ , which is the diagonal drawn from the origin of the vectors.

**Answer:** diagonal

16 a particle moves along the x-axis in such a way that its position at any instant is given by

$x = 5t^2 + 1$ , where x is in meters and t is in seconds. calculate its average velocity in the time interval between 2s and 3s.

25ms<sup>-1</sup>

30ms<sup>-1</sup>

50ms<sup>-1</sup>

15ms<sup>-1</sup>

**Solution:**

$$V_{avg} = \frac{X(T_2) - X(T_1)}{\Delta T}$$

$$X(T_1) = 5 \times 2^2 + 1 = 21 \text{ m}$$

$$X(T_2) = 5 \times 3^2 + 1 = 46 \text{ m}$$

$$V_{avg} = \frac{46 - 21}{1} = 25 \text{ m/s}$$

**Answer:** 25 m/s

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