Answer on Question #72751, Physics / Other

Question 10 : if Vector P = 5i -2j and Q=3i+3j and R=4i-j . What is P+Q+R?

12i

14i

7i

6i

Solution:

$$P + Q + R = (5 + 3 + 4)i + (-2 + 3 - 1)j = 12i$$

Answer: $12i$

Question 11 : If you run on a winding path from point A to point B and travel a distance of 240m in 20sec then your average speed is

20m/s

6m/s

12m/s

16m/s

Solution:

$$v = \frac{d}{t} = \frac{240\ m}{20\ s} = 12\ m/s$$

Answer: $12\ m/s$

Question 12 : When a body accelerates in motion it means that its

path is linear

velocity is uniform

velocity changes continously

None of these

Solution:

Acceleration is a vector quantity that is defined as the rate at which an object changes its velocity. An object is accelerating if it is changing its velocity.

Answer: velocity changes continuously

Question 13 : The scalar product of any two vectors at right angles to each other is always

90

None of these

zero

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Solution:

We can use the definition to find the scalar product of **a** and **b**.

$$\mathbf{a} \cdot \mathbf{b} = |\mathbf{a}||\mathbf{b}| \cos\theta = |\mathbf{a}||\mathbf{b}| \cos 90° = 0$$

because $\cos 90° = 0$.

Answer: zero

Question 14 : If a force of 40N acting in the direction due East and a force of 30N is acting in the direction due North. Then the magnitude of the resultant forces will be

30N

40N

20N

50N

Solution:

$$d = \sqrt{a^2 + b^2} = \sqrt{40^2 + 30^2} = \sqrt{2500} = 50\ N$$

Answer: $50\ N$