

(EPC02-0001M)

- Two forces, one of 10 N and another of 6 N acts upon a body. The directions of the forces are unknown. The resultant force on the body is
 - A) between 6 and 10 N
 - B) between 4 and 16 N
 - C) more than 6 N
 - D) more than 10 N

(EPC02-0002E)

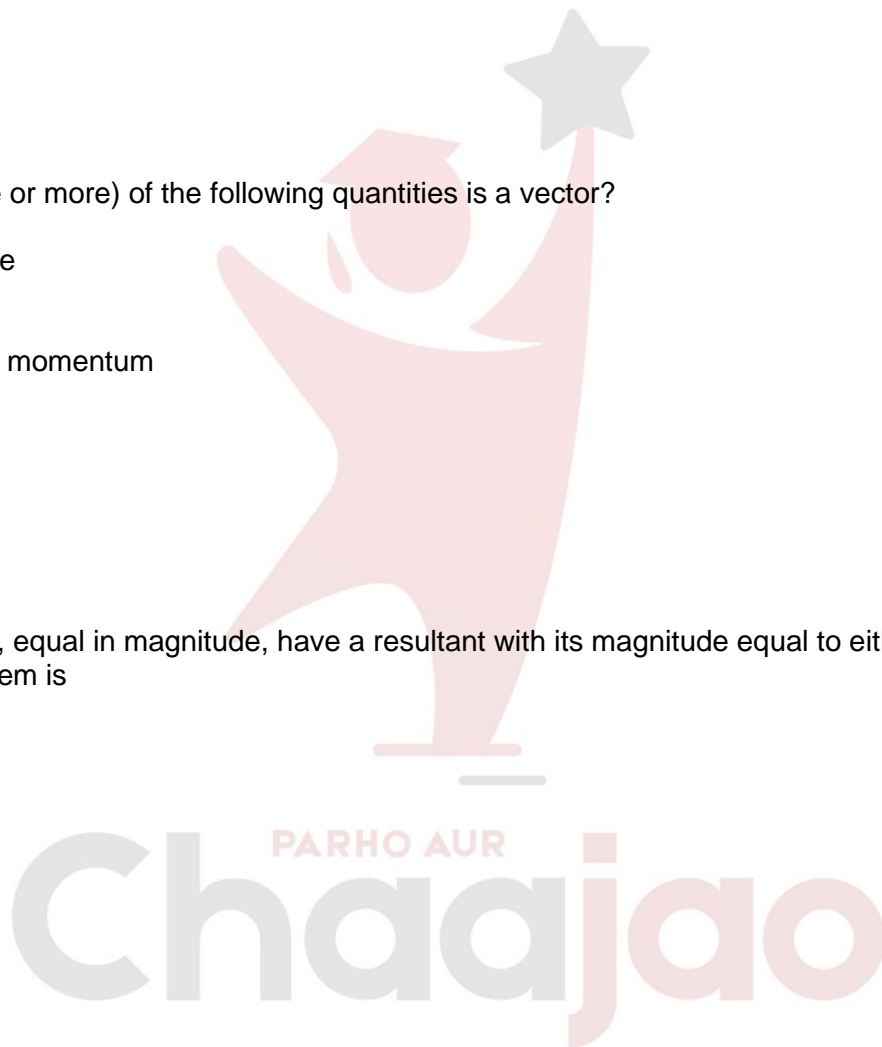
- Which (one or more) of the following quantities is a vector?
 - A) pressure
 - B) power
 - C) current
 - D) angular momentum

(EPC02-0003H)

- Two forces, equal in magnitude, have a resultant with its magnitude equal to either. The angle between them is
 - A) 45°
 - B) 60°
 - C) 90°
 - D) 120°

(EPC02-0004H)

- One of the two rectangular components of a force is 10 N and it makes an angle of 60° with the force. The magnitude of the force is
 - A) 7.1 N
 - B) 14.1 N
 - C) 17.3 N
 - D) 20 N



(EPC02-0005M)

- If three vectors A, B and C are 12, 5 and 13 in magnitude such that $C = A + B$, then the angle between A and B is
 - A) 60°
 - B) 90°
 - C) 120°
 - D) none of these

(EPC02-0006M)

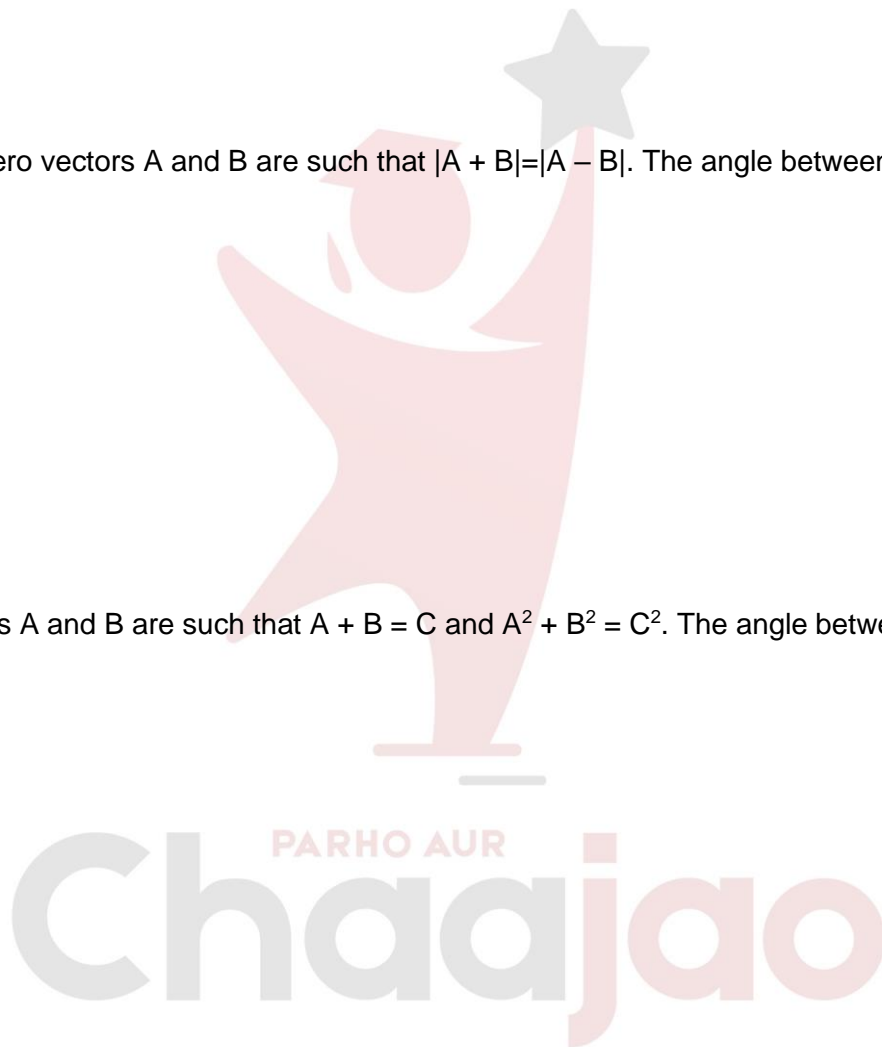
- Two non-zero vectors A and B are such that $|A + B| = |A - B|$. The angle between them is
 - A) 0°
 - B) 60°
 - C) 90°
 - D) 180°

(EPC02-0007M)

- Two vectors A and B are such that $A + B = C$ and $A^2 + B^2 = C^2$. The angle between them is
 - A) 0°
 - B) 90°
 - C) 120°
 - D) 180°

(EPC02-0008M)

- The work done by a force is defined as $W = F \cdot S$. In a certain situation F and S are not zero but the work done is zero. From this we conclude that
 - A) F and S are in the same direction
 - B) F and S are in opposite directions
 - C) F and S are at right angles
 - D) none of the above



(EPC02-0009M)

- If $A = 4i + 3j - 2k$ and $B = 8i + 6j - 4k$, the angle between A and B is

- A) 45°
- B) 60°
- C) 0°
- D) 90°

(EPC02-0010H)

- One of the two forces is double the other and their resultant is equal to the greater force. The angle between them is

- A) $\cos^{-1}\left(\frac{1}{2}\right)$
- B) $\cos^{-1}\left(-\frac{1}{2}\right)$
- C) $\cos^{-1}\left(\frac{1}{4}\right)$
- D) $\cos^{-1}\left(-\frac{1}{4}\right)$

(EPC02-0011M)

- The resultant of two forces of magnitudes 5 N and 10 N cannot be

- A) 4 N
- B) 6 N
- C) 9 N
- D) 13 N

(EPC02-0012M)

- Two vectors A and B lie in a plane. Another vector C lies outside this plane. Then $A + B + C$

- A) can be zero
- B) cannot be zero
- C) lies in the plane containing $A + B$
- D) lies in the plane containing $A - B$



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(EPC02-0013M)

- A particle is simultaneously acted upon by two forces, one of 3 N and the other of 4 N. The net force on the particle is
 - A) 7 N
 - B) 5 N
 - C) 1 N
 - D) between 1 N and 7 N

(EPC02-0014H)

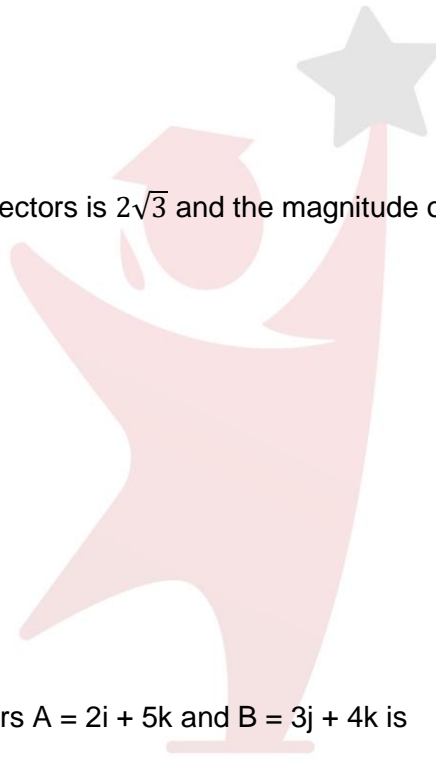
- The scalar product of two vectors is $2\sqrt{3}$ and the magnitude of their vector product is 2. The angle between them is
 - A) 30°
 - B) 45°
 - C) 60°
 - D) 90°

(EPC02-0015M)

- The scalar product of vectors $A = 2i + 5k$ and $B = 3j + 4k$ is
 - A) 20
 - B) 23
 - C) $5\sqrt{33}$
 - D) 26

(EPC02-0016M)

- Two vectors A and B are such that $|A| = |B| = |A - B|$. The angle between them is
 - A) 0°
 - B) 60°
 - C) 90°
 - D) 120°



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(EPC02-0017E)

- Pick out the only vector quantity
 - A) pressure
 - B) impulse
 - C) gravitational potential
 - D) coefficient of friction

(EPC02-0018E)

- Pick out the only scalar quantity
 - A) power
 - B) electric field
 - C) magnetic moment
 - D) average velocity

(EPC02-0019H)

- Two forces have magnitudes in the ratio 3 : 5 and the angle between their directions is 60° . if their resultant is 35 N, their magnitudes are
 - A) 12 N, 20 N
 - B) 15 N, 25 N
 - C) 18 N, 30 N
 - D) 21 N, 28 N



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(EPC02-0020E)

- Which of the following is example of a scalar quantity?
 - A) Velocity
 - B) Force
 - C) Angular momentum
 - D) Electrostatic potential

(EPC02-0021M)

- Which of the following vectors is/are perpendicular to the vector $4i - 3j$?
 - A) $4i + 3j$
 - B) $6i$
 - C) $7k$
 - D) $3i - 4j$

(EPC02-0022M)

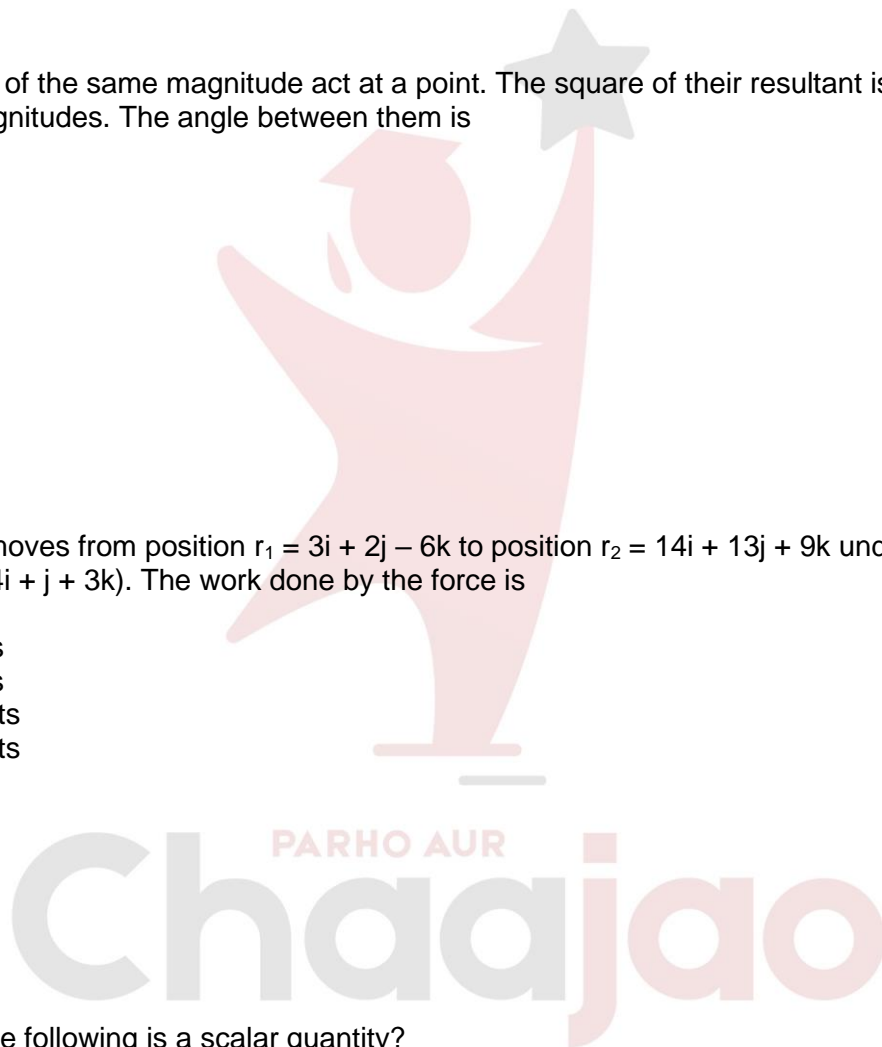
- Two forces of the same magnitude act at a point. The square of their resultant is 3 times the product of their magnitudes. The angle between them is
 - A) 0°
 - B) 30°
 - C) 60°
 - D) 90°

(EPC02-0023H)

- A particle moves from position $r_1 = 3i + 2j - 6k$ to position $r_2 = 14i + 13j + 9k$ under the action of a force $F = (4i + j + 3k)$. The work done by the force is
 - A) 50 units
 - B) 75 units
 - C) 100 units
 - D) 200 units

(EPC02-0024E)

- Which of the following is a scalar quantity?
 - A) electric current
 - B) electric field
 - C) acceleration
 - D) linear momentum



(EPC02-0025M)

- If $|V_1 + V_2| = |V_1 - V_2|$ and V_1 and V_2 are finite, then
 - A) V_1 is parallel to V_2
 - B) $V_1 = V_2$
 - C) $|V_1| = |V_2|$
 - D) V_1 and V_2 are mutually perpendicular



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Answer key	
1	B
2	D
3	D
4	D
5	B
6	C
7	B
8	C
9	C
10	D
11	A
12	B
13	D
14	A
15	A
16	B
17	B
18	A
19	B
20	D
21	C
22	C
23	C
24	A
25	D



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