

Daily Practice Problems-01

Q1. Two forces, each of magnitude F have a resultant of the same magnitude F . The angle between the two forces is

- a. 45°
- b. 120°
- c. 150°
- d. 60°

Q2. The $|\vec{A} + \vec{B}| = |\vec{A}| + |\vec{B}|$, then angle between \vec{A} and \vec{B} will be

- a. 90°
- b. 120°
- c. 0°
- d. 60°

Q3. The maximum and minimum magnitudes of the resultant of two vectors of magnitudes P and Q are in the ratio 3:1. Which of the following relations is true?

- a. $P = 2Q$
- b. $P = Q$
- c. $PQ = 1$
- d. None of these

Q4. The maximum and minimum magnitude of the resultant of two given vectors are 17 units and 7 unit, respectively. If these two vectors are at right angles to each other, the magnitude of their resultant is

- a. 14
- b. 16
- c. 18
- d. 13

Q5. Which pair of the following forces will never give resultant force of 2 N?

- a. 2 N and 2 N
- b. 1 N and 1 N
- c. 1 N and 3 N
- d. 1 N and 4 N

Q6. The sum of the magnitudes of two forces acting at a point is 18 and the magnitude of their resultant is 12. If the resultant is at 90° with the force of smaller magnitude, what are the magnitudes of forces?

Q7. At what angle should the two force vectors $2F$ and $\sqrt{2}F$ act so that the resultant force is $\sqrt{10}F$?

Q8. Two forces, while acting on a particle in opposite directions, have the resultant of 10 N. If they act at right angles to each other, the resultant is found to be 50 N. Find the two forces.

Q9. Two forces each equal to $F/2$ act at right angle. Their effect may be neutralized by a third force acting along their bisector in the opposite direction. What is the magnitude of that third force?

Q10. The resultant of two forces has magnitude 20 N. One of the forces is of magnitude $20\sqrt{3}$ N and makes an angle of 30° with the resultant. Then what is the magnitude of the other force?

Q11. The resultant of \vec{P} and \vec{Q} is \vec{R} . If \vec{Q} is doubled, \vec{R} is doubled; when \vec{Q} is reversed, \vec{R} is again doubled. Find P: Q: R.

ANSWERS

1. b

2. c

3. a

4. d

5. d

6. 5, 13

7. 45°

8. 40 N, 30 N

9. $F/\sqrt{2}$

10. 20N

11. $P: Q: R = \sqrt{2}: \sqrt{3}: \sqrt{2}$