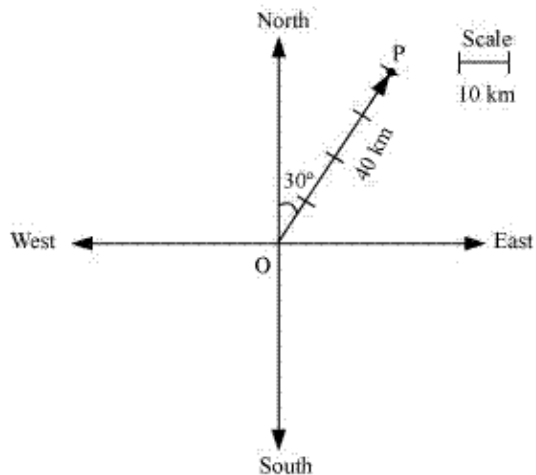


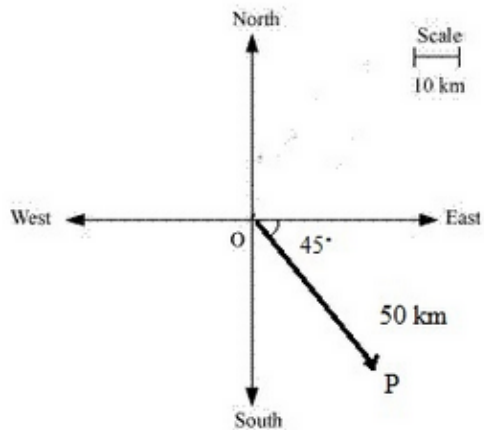
RD Sharma
Solutions Class
12 Maths
Chapter 23
Ex 23.1

Algebra of Vectors Ex 23.1 Q1(i)



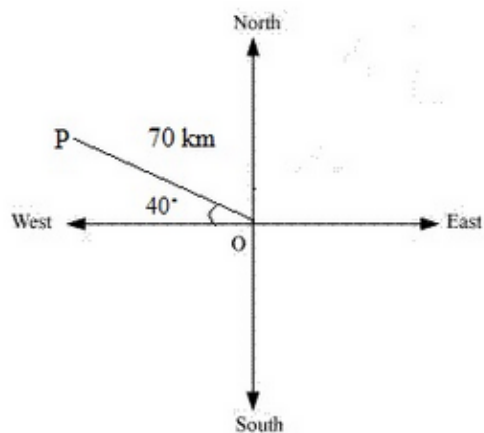
Here, vector \overline{OP} represents the displacement of 40 km, 30° East of North.

Algebra of Vectors Ex 23.1 Q1(ii)



Here, vector \overline{OP} represents the displacement of 50 km, south-east

Algebra of Vectors Ex 23.1 Q1(iii)



Here, vector \overline{OP} represents the displacement of 70 km, 40° north of west

Algebra of Vectors Ex 23.1 Q2

- (i) 15 kg is a scalar quantity because it involves only mass
- (ii) 20 kg weight is a vector quantity as it involves both magnitude and direction.
- (iii) 45° is a scalar quantity as it involves only magnitude.
- (iv) 10 meters south-east is a vector quantity as it involve direction.
- (v) 50 m/s^2 is a scalar quantity as it involves magnitude of acceleration.

Algebra of Vectors Ex 23.1 Q3

- (i) Time period is a scalar quantity as it involves only magnitude.
- (ii) Distance is a scalar quantity as it involves only magnitude.
- (iii) Displacement is vector quantity as it involves both magnitude and direction.
- (iv) Force is a vector quantity as it involves both magnitude and direction.
- (v) Work done is a scalar quantity as it involves only magnitude.
- (vi) Velocity is a vector quantity as it involves both magnitude as well as direction.
- (vii) Acceleration is a vector quantity because it involves both magnitude as well as direction.

Algebra of Vectors Ex 23.1 Q4

(i)

Collinear vectors are

\vec{x}, \vec{z} and \vec{b}

\vec{y}, \vec{c}

\vec{a}, \vec{d}

(ii)

Equal vectors are

\vec{y} and \vec{c}

\vec{x} and \vec{b}

\vec{a} and \vec{d}

(iii)

Coinitial vector are

\vec{a}, \vec{y} and \vec{z}

(iv)

Collinear but not equal

\vec{b} and \vec{z}

\vec{x} and \vec{z}

Algebra of Vectors Ex 23.1 Q5

(i) a and b are collinear, it is true.

(ii) Two collinear vectors are may not be equal in magnitude, so it is false.

(iii) Zero vector may not be unique, so it is false.

(iv) Two vectors having same magnitude are may not be collinear so it is false.

(v) Two collinear vectors having the same magnitude are may not be equal, so it is false.