MTH103
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1. Determine the value of x so that \(A=2i+xj+k\) and \(B=4i-2j-2k\) are perpendicular.

-1

--->> 3

4

-2

2. Which of the following defined a unit vector a in the direction of a

--->> \(\hat{a}=\frac{a}{|a|}\)

\(\hat{a}=a+|a|\)

\(\hat{a}=a|a|\)

\(\hat{a}=\frac{|a|}{a}\)

3. Evaluate the sum of the vectors \(\bar{AK}+\bar{KL}+\bar{LP}+\bar{PQ}\)

\(\bar{KP}\)

--->> \(\bar{AQ}\)

\(\bar{LK}\)

\(\bar{AP}\)

4. Find the points of intersection of the circle \((x-3)^2+(y-4)^2=25\) and the locus \(x+y-12=0\).

--->> (3, 9) and (8,4)

(9, 3) and (4, 8)

(3, 8) and (9, 4)

(8, 4) and (9, 3)

5. Given \(r= -i+2j+2k\), find the magnitude of \(r\)

2

5

--->> 3

6. Determine the x and y intercepts of the ellipse equation \(4y^2+9x^2=36

(3,6)

(6,2)

--->> (2,3)

(3,2)

7. Determine \(a-b-c\), if \(a=5i-2j\), \(b=3i+3j\) and \(c=4i-j\)

\(-2i+4j\)

\(2i-4j\)

--->> \(-2i-4j\)

\(2i+4j\)

8. Obtain the equation of the line with slope and passing through the point (-3, 4).

\(4y-3x+1=0\)

\(3y+4x+7=0\)

\(4y-2x+12=0\)

--->> \(3y+2x-6=0\)

9. The direction of a quantity is indicated by?

Line

Point

--->> Arrow head

Angle

10. The distance between the centre of a circle and its circumference is called?

--->> Radius

Equator

Centre line