

S.4 Add Maths Quiz 17(a)

Time allowed:

Total Mark:

1. Given a circle $C : (x+1)^2 + (y-3)^2 = \frac{29}{2}$.

- (a) Find, in terms of k , the distance from the centre of C to the line $L : 3x - 7y = k$.
- (b) Find the values of k for which L is a tangent to C .

2. Given two circles

$$C_1 : x^2 + y^2 = r^2 \quad (r > 0)$$

$$C_2 : x^2 + y^2 - 8x + 6y + 21 = 0$$

If C_1 touches C_2 externally at P, find the coordinates of P, the value of r and the equation of the common tangent at P.

3. Let $C : x^2 + y^2 - 2x - 10y + 18 = 0$ be a given circle.

- (a) Find the coordinates of the centre X of C .
- (b) Find the equation of the chord with mid-point M(0, 4).
- (c) Show that the line with equation $x + y = 2$ is a tangent to C and find the coordinates of the point of contact P.
- (d) Show that X, M and P are collinear.

End of Quiz