

Essential Skills 8

The skills in this series of worksheets appear frequently.

These are the GIFTS you must take to succeed



Equation of a Tangent to a Circle

Find the equation of each tangent at point P:

1. $(x - 1)^2 + (y - 5)^2 = 25; P(-3, 2)$

2. $x^2 + y^2 - 6x - 10y + 16 = 0; P(6, 2)$

3. $x^2 + y^2 - 4x + 6y + 5 = 0; P(4, -1)$

4. $x^2 + y^2 = 10; P(3, 1)$

5. $(x + 5)^2 + y^2 = 40; P(-3, -6)$

6. $x^2 + y^2 + 2y - 24 = 0; P(4, 2)$

7. $(x - 3)^2 + (y + 2)^2 = 26; P(2, 3)$

8. $x^2 + y^2 + 2x + 4y - 3 = 0; P(-3, 0)$

9. $(x + 3)^2 + (y - 2)^2 = 4; P(-1, 2)$

10. $x^2 + y^2 - 8x + 2y + 1 = 0; P(4, 3)$

APPLYING QUESTION



The circles with equations $x^2 + y^2 + 14x + 2y - 50 = 0$ and $(x - 5)^2 + (y - 8)^2 = 25$ touch at one common point.

- (a) Find the coordinates of P, the point where the circles touch.
- (b) Find the equation of the common tangent at P.