



Name: _____ Date: _____ Score: _____ / 43

1 A circle has equation $(x - 2)^2 + (y + 1)^2 = 25$.

The point $P(5, 3)$ lies on the circle.

Find an equation of the tangent to the circle at P . Give your answer in the form $ax + by = c$. (4 marks)

Answer _____

2 The circle C has equation $x^2 + y^2 = 25$

The point $P(3, 4)$ lies on C .

Find an equation of the tangent to C at the point P .

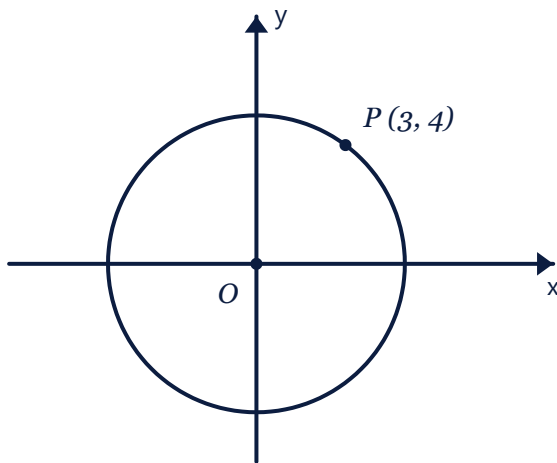


Diagram NOT accurately drawn

(4 marks)

Answer _____

- 3 The circle C has equation $x^2 + y^2 = 29$
The point P $(-2, 5)$ lies on C.
Find an equation of the tangent to C at the point P.

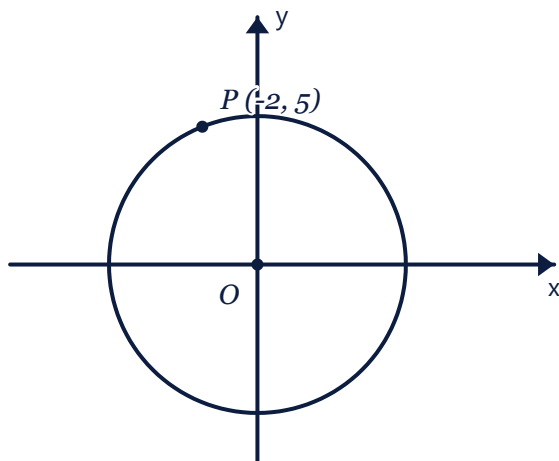


Diagram NOT accurately drawn

(4 marks)

Answer _____

- 4 A circle has equation $(x + 3)^2 + (y - 2)^2 = 13$.
The point P $(-1, 5)$ lies on the circle.
Find an equation of the tangent to the circle at P. Give your answer in the form $ax + by = c$. (4 marks)

Answer _____

5 A circle has centre O, the origin, and passes through the point T (5, 12).

- Find an equation of the circle.
- The point D has coordinates (10, 9). Decide whether D is inside the circle, on the circle, or outside the circle. You must show your working.

(4 marks)

Answer _____

6 The circle C has centre O, the origin, and equation $x^2 + y^2 = 100$
The tangent to C at the point P (6, 8) crosses the x-axis at the point A.
Find the exact coordinates of A.

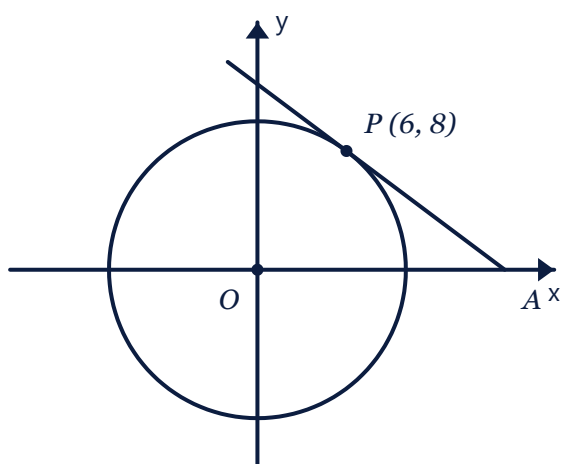


Diagram NOT accurately drawn

(4 marks)

Answer _____

- 7 The circle C has centre O, the origin, and equation $x^2 + y^2 = 45$
A tangent to C touches the circle at the point P.
The tangent has gradient $-\frac{1}{2}$ and P is in the first quadrant.
Find the coordinates of P.

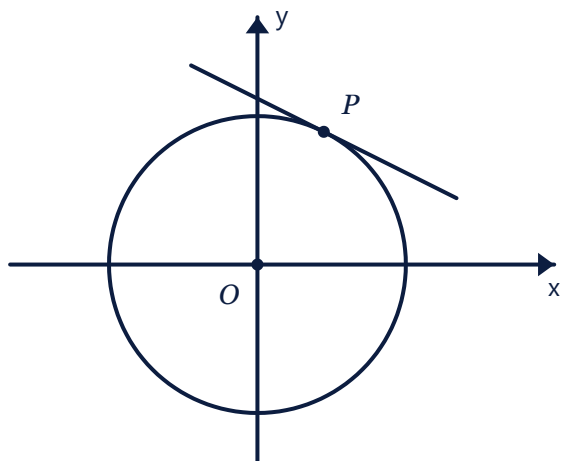


Diagram NOT accurately drawn

(4 marks)

Answer _____

- 8 A circle has equation $x^2 + y^2 = 20$.
The point A(4, 2) lies on the circle.
a. Find an equation of the tangent to the circle at A.
b. The tangent meets the x -axis at P and the y -axis at Q. Work out the area of triangle OPQ, where O is the origin.

(5 marks)

Answer _____

- 9 The line with equation $3x + 4y = 30$ is a tangent to a circle with centre O , the origin. Find an equation of the circle.

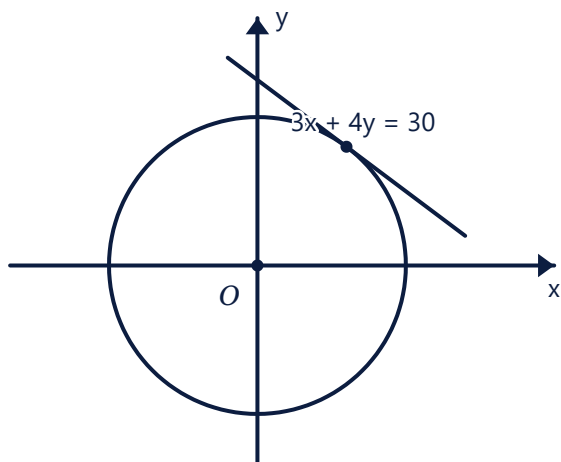


Diagram NOT accurately drawn

(5 marks)

Answer _____

- 10 The centre of a circle is $C(1, 2)$. The point $P(4, -2)$ lies on the circle.
- Work out the radius of the circle.
 - Find an equation of the tangent to the circle at P . Give your answer in the form $ax + by + c = 0$, where a , b and c are integers.

(5 marks)

Answer _____

End of questions | Total 43 marks