

Name: _____ Date: _____

1. The equation of a circle is $(x - 3)^2 + (y + 1)^2 = 25$.

(a) Write down the radius.

..... **5** (1)

(b) Write down the coordinates of the centre.

..... **(3, -1)** (1)

2. The equation of a circle is $(x + 8)^2 + y^2 = 1$.

(a) Write down the radius.

..... **1** (1)

(b) Write down the coordinates of the centre.

..... **(-8, 0)** (1)

3. The equation of a circle is $x^2 + y^2 = 4$.

(a) Write down the radius.

..... **2** (1)

(b) Write down the coordinates of the centre.

..... **(0, 0)** (1)

4. The equation of a circle is $(x + 0.5)^2 + (y - 0.3)^2 = 36$.

(a) Write down the radius.

..... **6** (1)

(b) Write down the coordinates of the centre.

..... **(-0.5, 0.3)** (1)

5. A circle has centre $(3, -1)$ and radius 5.

Write down the equation of the circle.

..... **$(x - 3)^2 + (y + 1)^2 = 25$** (1)

6. A circle has centre $(0, 6)$ and radius 2.

Write down the equation of the circle.

..... **$x^2 + (y - 6)^2 = 4$** (1)

7. A circle has centre $(0, 0)$ and radius 12.

Write down the equation of the circle.

..... **$x^2 + y^2 = 144$** (1)



8. A circle has equation $x^2 + y^2 = 100$.

Find the equation of the tangent at the point $(8, 6)$.

..... **$4x + 3y = 50$** (3)

9. A circle has equation $x^2 + y^2 = 25$.

Find the equation of the tangent at the point $(3, 4)$.

..... **$3x + 4y = 25$** (3)

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

Find the equation of the tangent at the point $(6, 2)$.

..... **$4x + 3y = 30$** (3)

11. A circle has equation $(x + 4)^2 + (y - 3)^2 = 64$.

Find the equation of the tangent at the point $(4, 3)$.

..... **$x = 12$** (3)

12. A circle has equation $x^2 + y^2 = 36$.

The tangent at the point $P(3, 3\sqrt{3})$ meets the x -axis at the point A .

Find the coordinates of A .

..... **$(12, 0)$** (4)

13. A circle has equation $(x - 3)^2 + (y + 2)^2 = 49$.

The tangent at the point $(10, -2)$ meets the x -axis at the point A .

Find the coordinates of A .

..... **$(17, 0)$** (4)

14. A circle has equation $x^2 + y^2 = 25$.

The point $P(-3, 4)$ lies on the circle.

Sam says that the tangent at P crosses the x -axis at $(-8, 0)$.
Is Sam correct?

You must show your working.

..... **Yes, Sam is correct.** (4)



15. Circle C has centre $(0, 0)$.

A straight line intersects the circle at the points

$P(5, 10)$ and $Q(-2, y)$.

Find the possible values of y .

..... **$y = 11$ or $y = -11$** (3)

16. A tangent to a circle with centre $(0, 0)$ passes through the points $(-12, 0)$ and $(0, 5)$.

Work out the equation of the circle.

..... **$x^2 + y^2 = 25$** (4)

17. A circle passes through the points $(5, 2)$, $(1, 6)$ and $(5, 10)$.

Find the equation of the circle.

..... **$(x - 5)^2 + (y - 6)^2 = 20$** (5)