

QT Equation of the Tangent to a Circle



1. The diagram shows a circle $x^2 + y^2 = 8$

A tangent line is drawn at point P (2,2).

(a) Find the gradient of the line OP

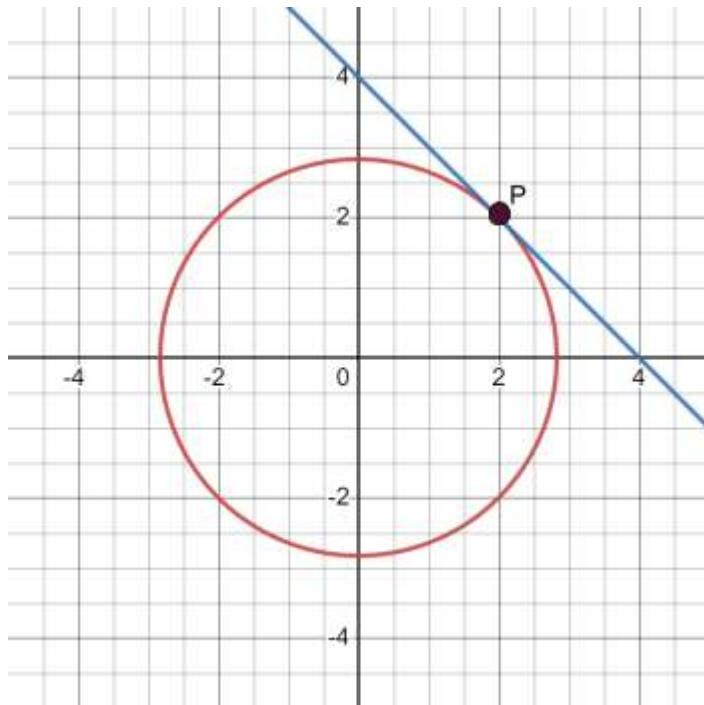
(1 mark)

(b) Find the gradient of the tangent

(2 marks)

(c) Find the equation of the tangent

(2 marks)



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2. The diagram shows a circle $x^2 + y^2 = 34$

A tangent line is drawn at point Q (-5,-3).

(a) Find the gradient of the line OQ

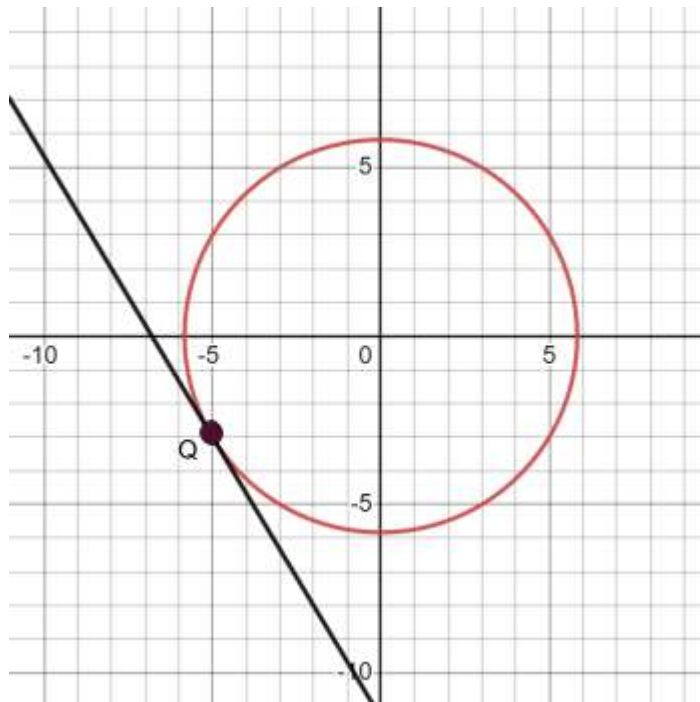
(1 mark)

(b) Find the gradient of the tangent

(2 marks)

(c) Find the equation of the tangent

(2 marks)



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3. A circle has a centre at (3,6).

The point T (9,12) lies on the circumference of the circle.

Find the equation of the tangent to the circle at point T.

(5 marks)

4. A circle has the equation $x^2 + y^2 = 20$

(a) Write down the centre of the circle

(1 mark)

(b) Write down the exact length of the radius of the circle

(1 mark)

(c) The point S (2,4) lies on the circumference of the circle.

Find the equation of the tangent to the circle at point S

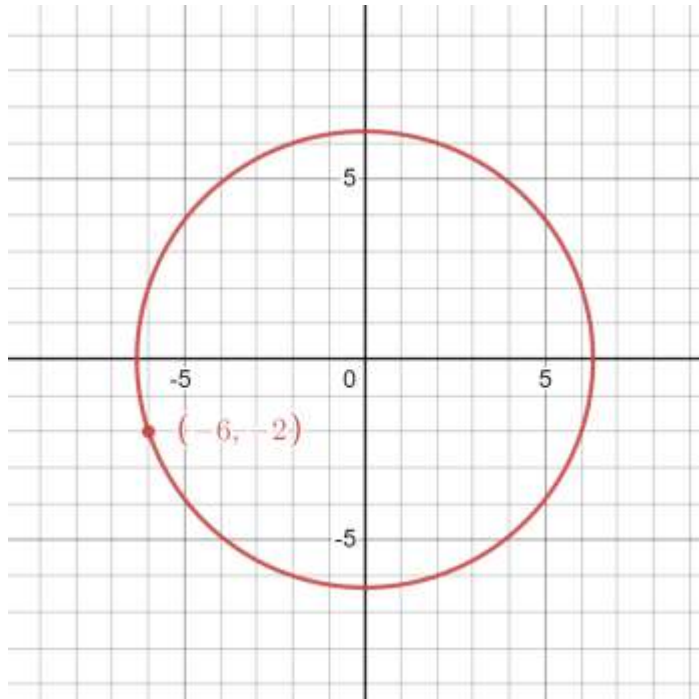
(4 marks)

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5. The diagram shows a circle of radius $\sqrt{40}$ cm, centre $(0,0)$
Find the equation of the tangent to the circle at the point $(-6,-2)$

(5 marks)



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6. The diagram shows a circle $x^2 + y^2 = 20$

A point P lies on the circumference and has an x coordinate of 2.

The tangent at P intersects the x-axis at point Q

Work out the coordinates of point Q

(6 marks)

