Equation of a Tangent

REVISE THIS TOPIC

CHECK YOUR ANSWERS

SCAN ME

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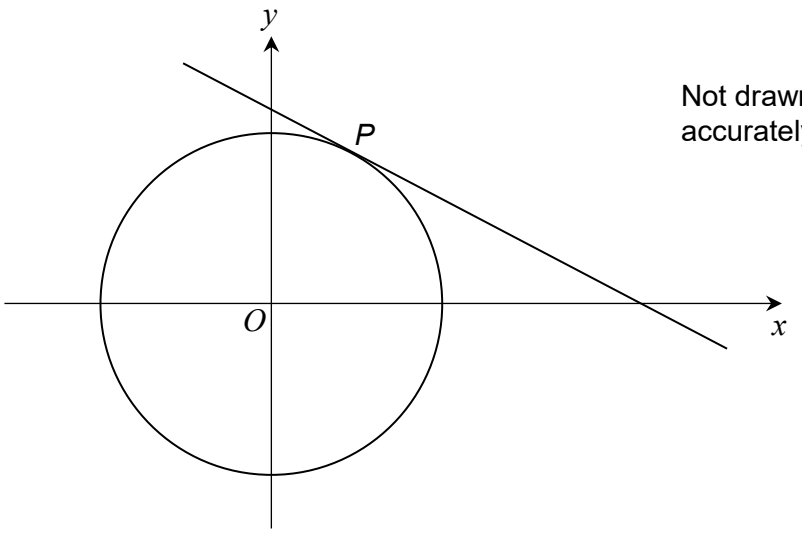
1 P (2, 4) is a point on a circle, centre O.



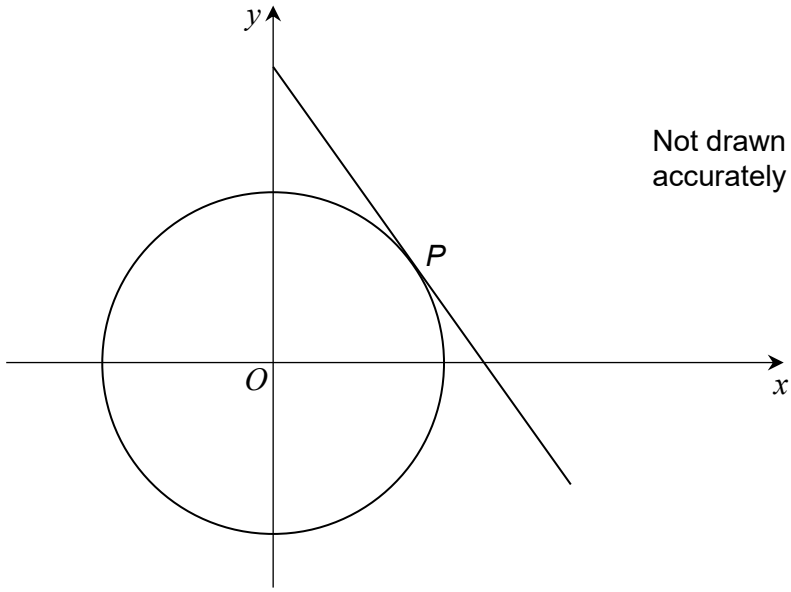
Not drawn accurately

Work out the equation of the tangent to the circle at P.
Give your answer in the form $y = mx + c$ **[4 marks]**

Answer _____

4

2 P (9, 3) is a point on a circle, centre O.



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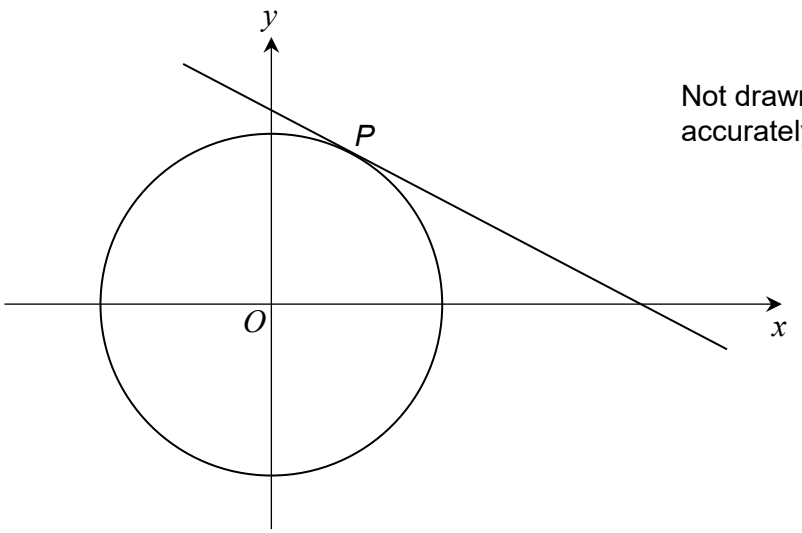
Work out the equation of the tangent to the circle at P.
Give your answer in the form $y = mx + c$

[4 marks]

Answer _____

Solutions

3 P (2, 5) is a point on a circle, centre O.



Not drawn accurately

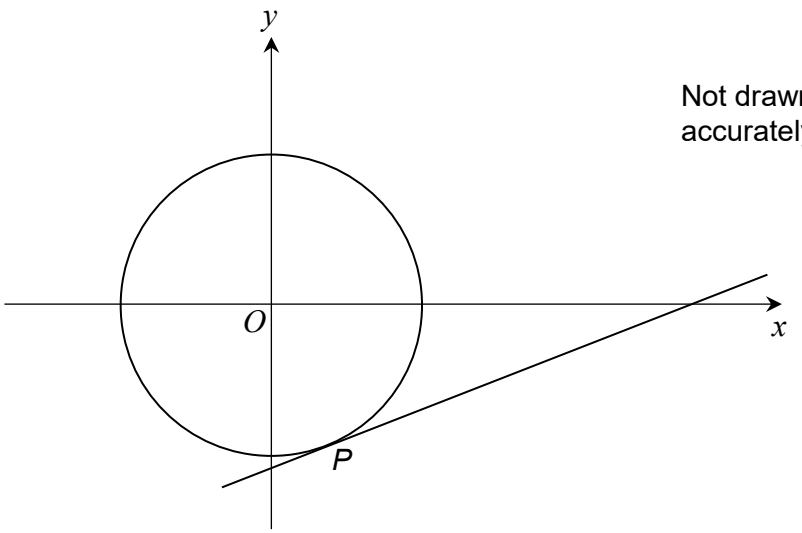
Work out the equation of the tangent to the circle at P.
Give your answer in the form $y = mx + c$

[4 marks]

Answer _____

8

4 P (1, -4) is a point on a circle, centre O.



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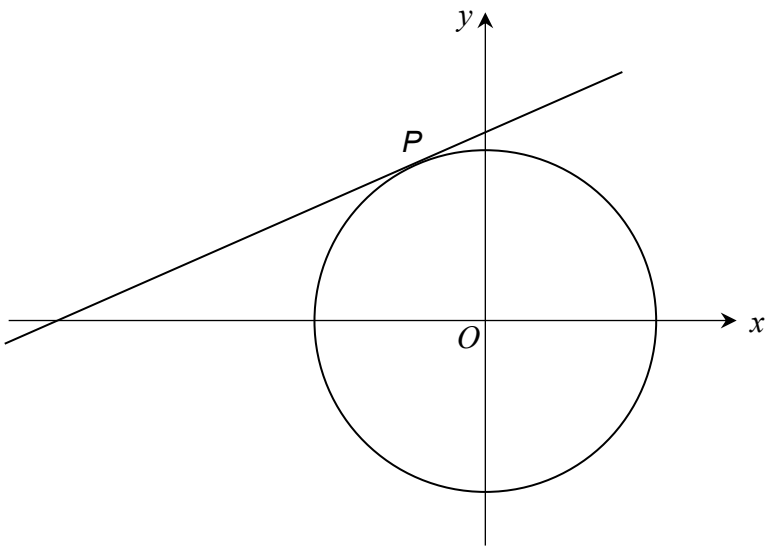
Work out the equation of the tangent to the circle at P.
Give your answer in the form $y = mx + c$ **[4 marks]**

Answer _____

Solutions

5 P (-3, 5) is a point on a circle, centre O.



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Work out the equation of the tangent to the circle at P.
Give your answer in the form $y = mx + c$

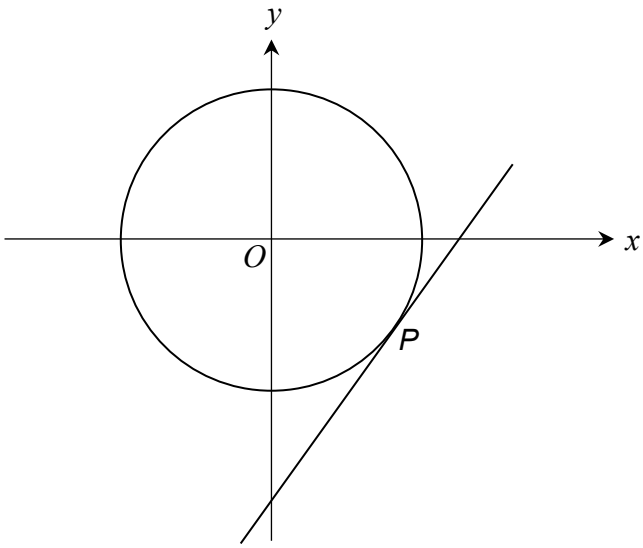
[4 marks]

Answer _____

8

6 P is a point on the circle with equation $x^2 + y^2 = 65$

P has coordinates $(7, k)$, where $k < 0$



Not drawn accurately

Work out the equation of the tangent to the circle at P.

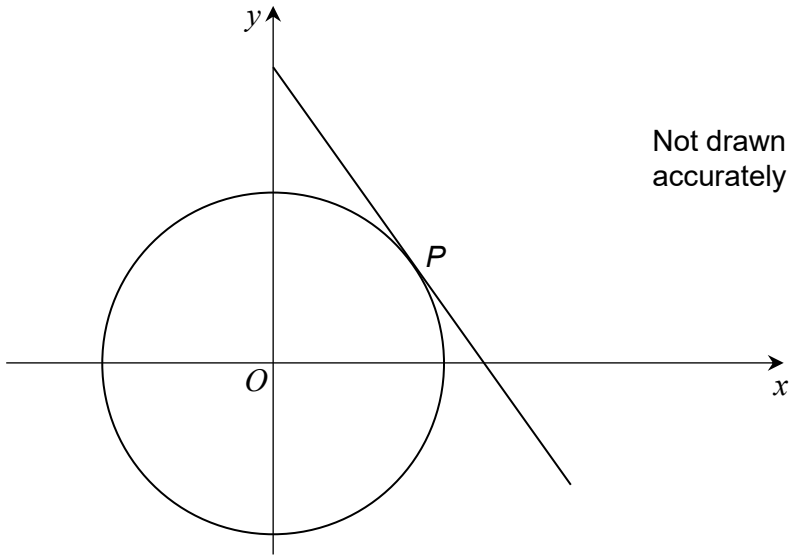
Give your answer in the form $y = mx + c$ **[5 marks]**

Answer _____

Solutions

7 P is a point on the circle with equation $x^2 + y^2 = 117$

P has coordinates $(9, k)$, where $k > 0$



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Work out the equation of the tangent to the circle at P.

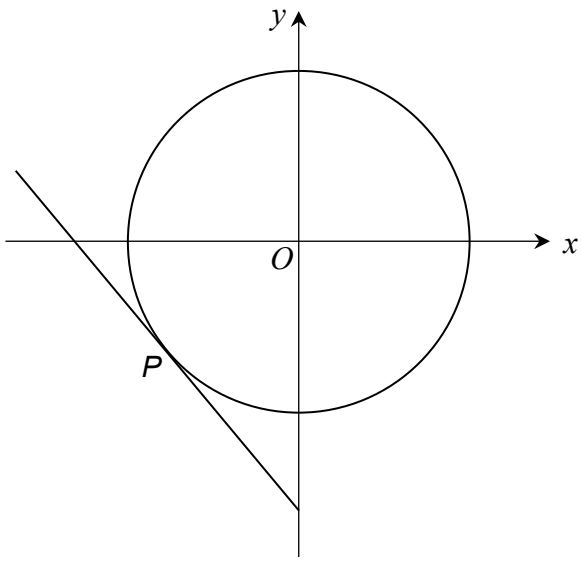
Give your answer in the form $y = mx + c$ **[5 marks]**

Answer _____

10

8 P is a point on the circle with equation $x^2 + y^2 = 22.25$

P has coordinates $(-4, k)$, where $k < 0$



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Work out the equation of the tangent to the circle at P.

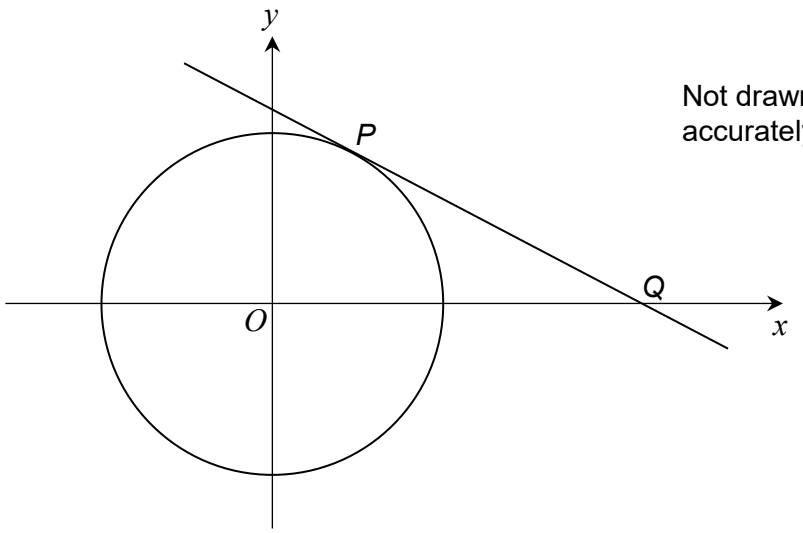
Give your answer in the form $ay + bx + c = 0$ where a, b and c are integers.

[6 marks]

Answer _____

Solutions

9 P (2, 3) is a point on a circle, centre O.
The tangent at P intersects the x-axis at Q



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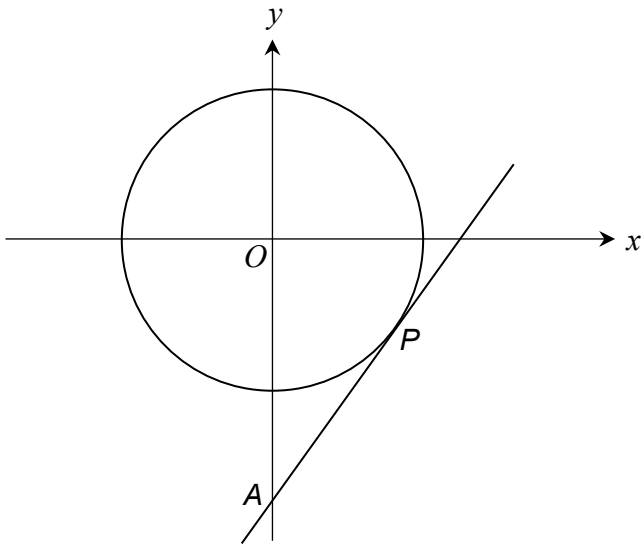
Work out the coordinates of the point Q. **[5 marks]**

Answer (_____ , _____)

11

10 P (14, -4) is a point on a circle, centre O.
The tangent at P intersects the y-axis at A



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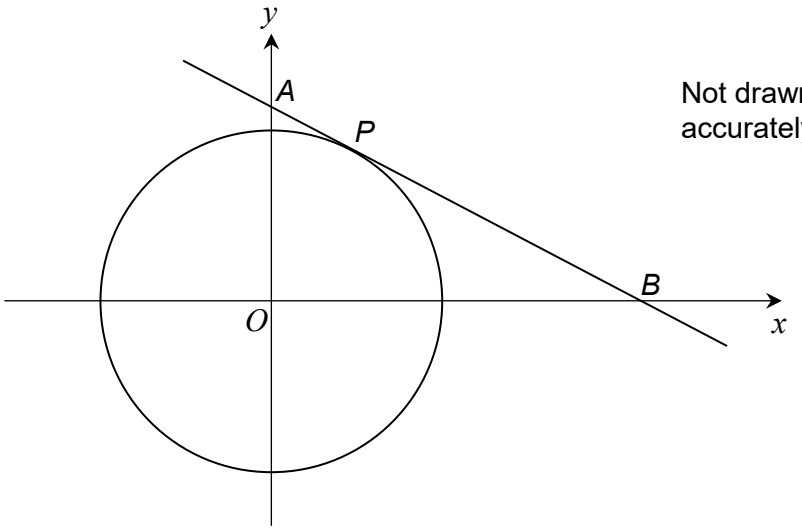
Work out the coordinates of the point A. **[5 marks]**

Answer (_____ , _____)

Solutions

11 P (3, 9) is a point on a circle, centre O.
The tangent at P intersects the axes at points A and B.



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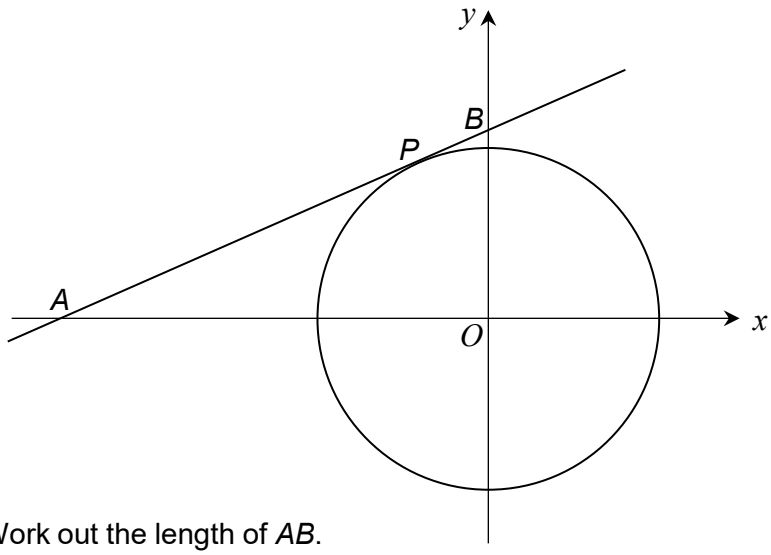
Work out the area of triangle AOB. **[6 marks]**

Answer _____ units^2

11

12 P (-8, 16) is a point on a circle, centre O.
The tangent at P intersects the axes at points A and B.



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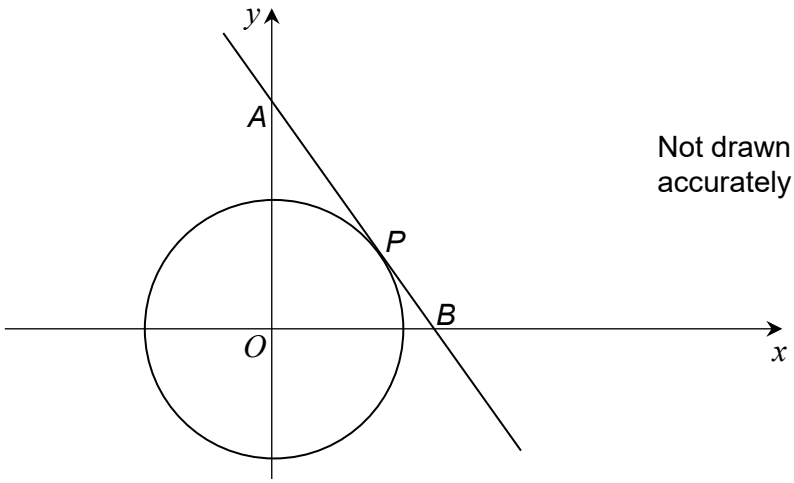
Work out the length of AB.
Give your answer in the form $a\sqrt{5}$ where a is an integer. **[6 marks]**

Answer _____ units

Solutions

13 P (5, 2) is a point on a circle, centre O.
The tangent at P intersects the axes at points A and B.



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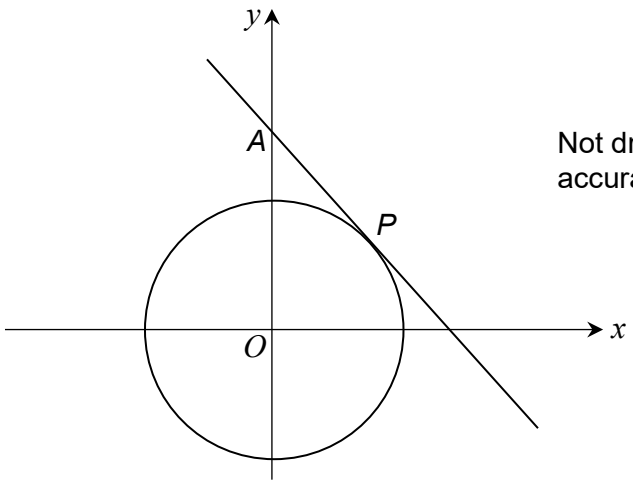
Work out the length of AB.
Give your answer to 4 significant figures. **[6 marks]**

Answer _____ units

12

14 $P\ (\sqrt{12}, 6)$ is a point on a circle, centre O.
The tangent at P intersects the y-axis at point A.



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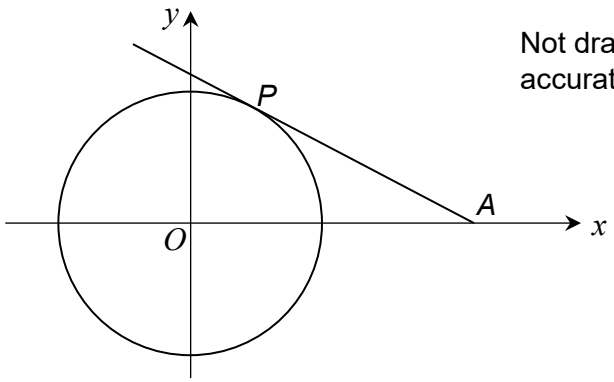
Show that the length of AP is an integer. **[6 marks]**

Solutions

15 $P\ (\sqrt{5}, \sqrt{20})$ is a point on a circle, centre O.
The tangent at P intersects the x-axis at point A.



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Work out the area of triangle AOP. **[6 marks]**

Answer _____ units^2

12

Solutions