

Find an equation for <i>C</i> .	
	(6)



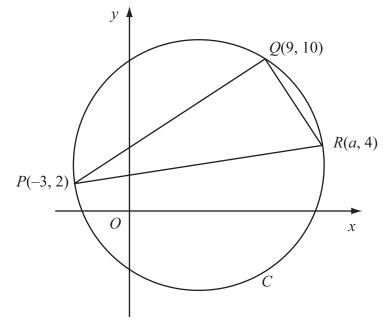


Figure 2

The points P(-3, 2), Q(9, 10) and R(a, 4) lie on the circle C, as shown in Figure 2. Given that PR is a diameter of C,

(a) show that a = 13,

(3)

(b) find an equation for C.

(5)

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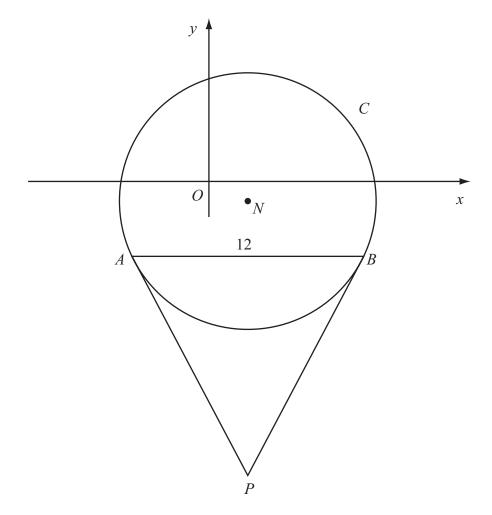


Figure 3

Figure 3 shows a sketch of the circle C with centre N and equation

$$(x-2)^2 + (y+1)^2 = \frac{169}{4}$$

(a) Write down the coordinates of N.

(2)

(b) Find the radius of *C*.

(1)

The chord AB of C is parallel to the x-axis, lies below the x-axis and is of length 12 units as shown in Figure 3.

(c) Find the coordinates of A and the coordinates of B.

(5)

(d) Show that angle $ANB = 134.8^{\circ}$, to the nearest 0.1 of a degree.

(2)

The tangents to C at the points A and B meet at the point P.

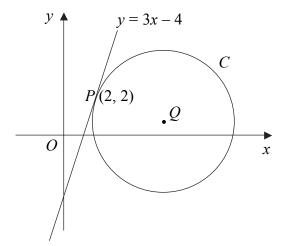
(e) Find the length AP, giving your answer to 3 significant figures.

(2)

•	The points A and B have coordinates $(-2, 11)$ and $(8, 1)$ respectively.	
	Given that AB is a diameter of the circle C ,	
	(a) show that the centre of C has coordinates $(3, 6)$,	(1)
	(b) find an equation for C.	(4)
	(c) Verify that the point (10, 7) lies on C.	(1)
	(d) Find an equation of the tangent to C at the point (10, 7), giving you form $y = mx + c$, where m and c are constants.	ur answer in the
		(4)
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The line y = 3x - 4 is a tangent to the circle C, touching C at the point P(2, 2), as shown in Figure 1.

The point Q is the centre of C.

(a) Find an equation of the straight line through P and Q.

(3)

Leave blank

Given that Q lies on the line y = 1,

(b) show that the x-coordinate of Q is 5,

(1)

(c) find an equation for C.

(4)

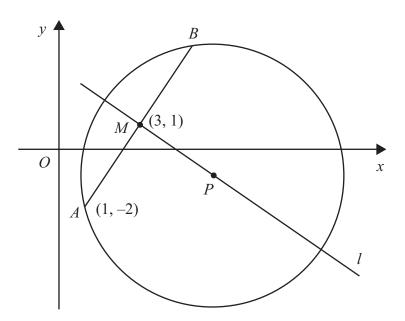


Figure 3

The points A and B lie on a circle with centre P, as shown in Figure 3. The point A has coordinates (1, -2) and the mid-point M of AB has coordinates (3, 1). The line I passes through the points M and P.

(a) Find an equation for l.

(4)

Leave blank

Given that the x-coordinate of P is 6,

(b) use your answer to part (a) to show that the y-coordinate of P is -1,

(1)

(c) find an equation for the circle.

(4)

The circle C has centre $(3, 1)$ and passes through the point $P(8, 3)$.	
The energy of the control (c, c), and public the point (c, c).	
(a) Find an equation for C.	
	(4)
(b) Find an equation for the tangent to C at P, giving your answer in the form	
ax + by + c = 0, where a, b and c are integers.	(-)
	(5)

The circle C has equation	
$x^2 + y^2 - 6x + 4y = 12$	
(a) Find the centre and the radius of C .	(5)
The point $P(-1, 1)$ and the point $Q(7, -5)$ both lie on C .	
(b) Show that PQ is a diameter of C .	(2)
The point <i>R</i> lies on the positive <i>y</i> -axis and the angle $PRQ = 90^{\circ}$.	
(c) Find the coordinates of R .	(4)

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9. The circle C has centre A (2,1) and passes through the point $B(10,7)$.		
(a) Find an equation for C.	(4)	
The line l_1 is the tangent to C at the point B .		
(b) Find an equation for l_1 .	(4)	
The line I is negated to I and passes through the mid point of AP		
The line l_2 is parallel to l_1 and passes through the mid-point of AB .		
Given that l_2 intersects C at the points P and Q ,		
(c) find the length of PQ, giving your answer in its simplest surd form.	(2)	
	(3)	