Equation of a Circle

SCAN ME

REVISE THIS TOPIC

1 The equation of a circle is $x^2 + y^2 = 16$
Write down the radius of the circle.

4

(Total for Question 1 is 1 mark)

2 The equation of a circle is $x^2 + y^2 = 100$
Write down the diameter of the circle.

20

(Total for Question 2 is 1 mark)

3 The equation of a circle is $x^2 + y^2 = 400$
Write down the radius of the circle.

20

(Total for Question 3 is 1 mark)

4 The equation of a circle is $x^2 + y^2 = 9$
Write down the diameter of the circle.

6

(Total for Question 4 is 1 mark)

5 The equation of a circle is $x^2 + y^2 = 16^2$
Write down the radius of the circle.

16

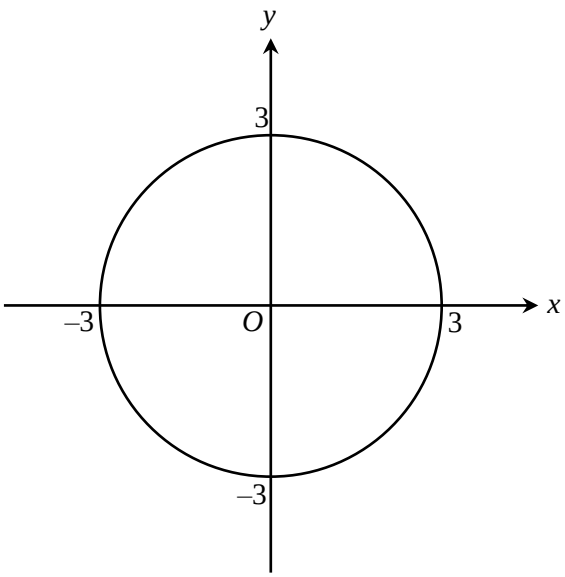
(Total for Question 5 is 1 mark)

6 The equation of a circle is $x^2 + y^2 = 25$
Write down the coordinates of the centre of the circle.

(0, 0)

(Total for Question 6 is 1 mark)

7 A circle, centre O, passes through (3, 0)



Write down the equation of the circle.

$x^2 + y^2 = 9$

(Total for Question 7 is 1 mark)

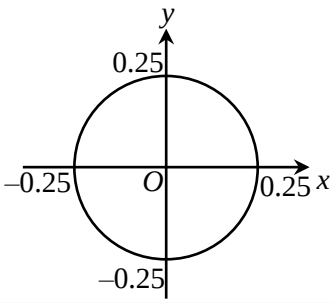
8 A circle has centre (0, 0) and passes through (9, 0)
Write down the equation of the circle.

$x^2 + y^2 = 81$

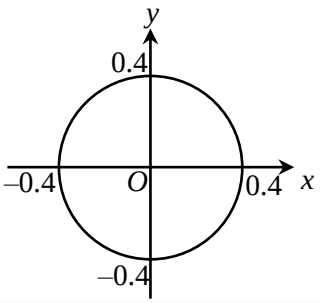
(Total for Question 8 is 1 mark)

9 Here are some graphs.

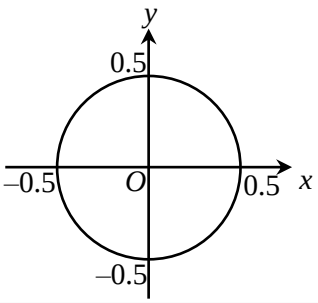
Graph **A**



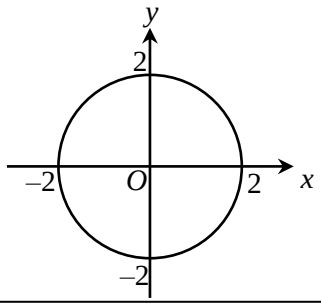
Graph **B**



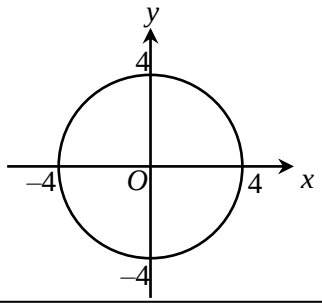
Graph **C**



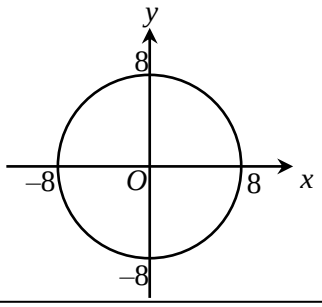
Graph **D**



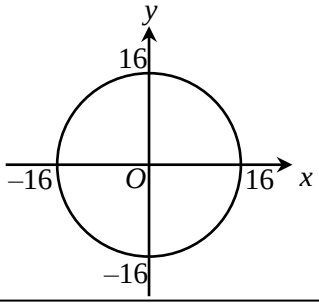
Graph **E**



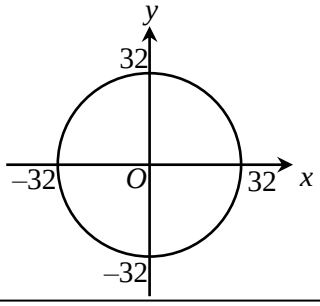
Graph **F**



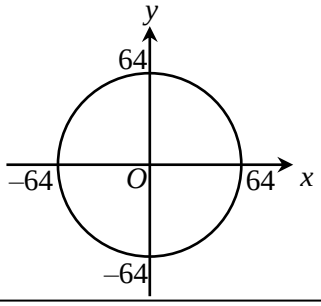
Graph **G**



Graph **H**



Graph **I**



Each of the equations in the table is the equation of one of the graphs.
Complete the table.

Equation	Graph Letter
$x^2 + y^2 = \frac{1}{4}$	C
$x^2 + y^2 = 4$	D
$x^2 + y^2 = 16$	E
$x^2 + y^2 = 64$	F

(Total for Question 9 is 2 marks)

10 A circle with centre (0, 0) has a diameter of 10.
Write down the equation of the circle.

$x^2 + y^2 = 25$

(Total for Question 10 is 1 mark)

11 A circle has centre (0, 0)
The line $y = -12$ is a tangent to the circle.
Write down the equation of the circle.

$x^2 + y^2 = 144$

(Total for Question 11 is 1 mark)

12 A circle with centre (0, 0) has a diameter of 3.
Write down the equation of the circle.

$x^2 + y^2 = 2.25$

(Total for Question 12 is 1 mark)

13 A circle with centre (0, 0) has a radius of $\sqrt{7}$.
Write down the equation of the circle.

$x^2 + y^2 = 7$

(Total for Question 13 is 1 mark)

14 The equation of a circle is $x^2 + y^2 = 9.82$
Write down the area of the circle in terms of π

9.82π

(Total for Question 14 is 1 mark)

15 Tick the correct box for each statement below

	True	False
$x^2 = 30 - y^2$ is an equation of a circle.	✓	
$\frac{x^2}{2} + \frac{y^2}{2} = 7$ is an equation of a circle.	✓	
$x^2 - y^2 = 64$ is an equation of a circle.		✓
$x^2 + y^2 = \pi^2$ is an equation of a circle.	✓	

(Total for Question 15 is 2 marks)

16 The equation of a circle is $x^2 + y^2 = 20$

Work out the radius of the circle.

Give your answer in the form $a\sqrt{b}$, where a and b are integers.

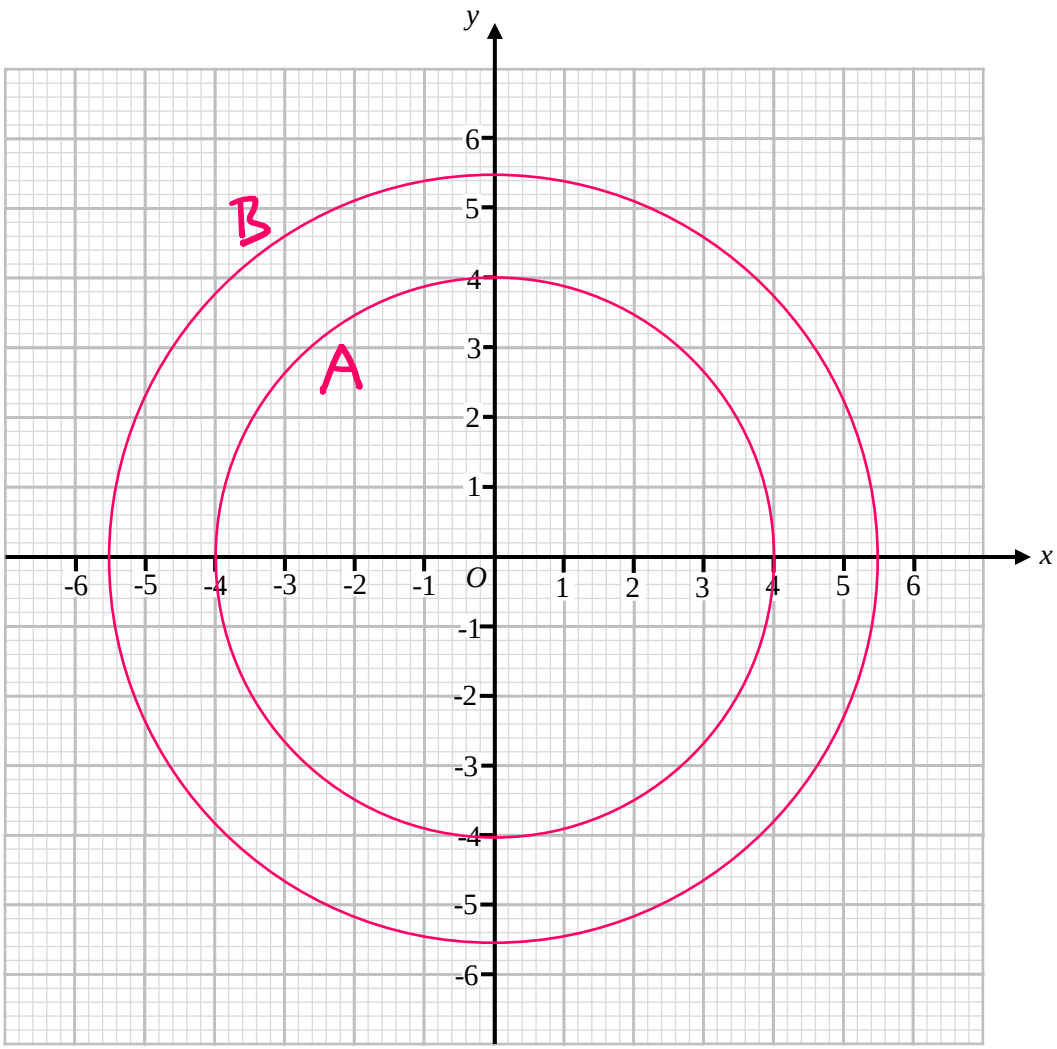
$\sqrt{20} = \sqrt{4} \times \sqrt{5}$

$= 2\sqrt{5}$

$2\sqrt{5}$

(Total for Question 16 is 2 marks)

17



(a) On the grid above, draw the graph of $x^2 + y^2 = 16$
Label the graph ***A***.

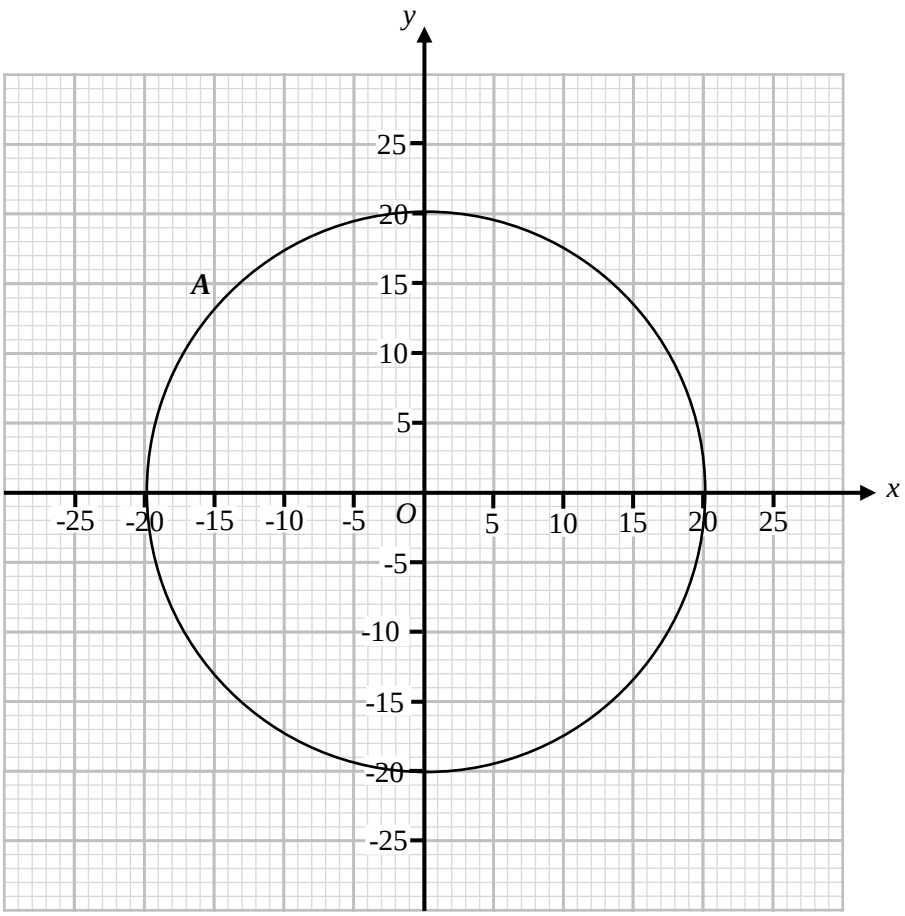
(2)

(b) On the grid above, draw the graph of $x^2 + y^2 = 30\frac{1}{4}$
Label the graph ***B***.

(2)

(Total for Question 18 is 4 marks)

18 The graph of circle A is shown on the grid below.



(a) Write down the equation of circle ***A.***

$x^2 + y^2 = 400$

(1)

(b) Sammi draws another circle called circle ***B***.

Area of circle ***B*** = 50% of the area of circle ***A***.

Work out the equation of circle ***B***.

$400\pi \div 2 = 200\pi$

$x^2 + y^2 = 200$

(2)

(Total for Question 18 is 3 marks)