Maths

Decide Whether a Point Lies On, Outside or Inside a Circle

Miss Davies

Please note some slides do have colour font on them
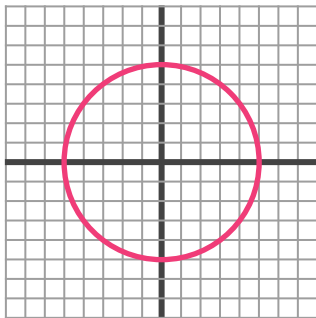
Points on a circle

1. The graph shows a circle with

   equation $x^2 + y^2 = 100$

   Fill in the table

Point	Lies on the circle?
(-6, 8)	
(8,4)	
(0, -10)	

2. Fill in the table

	5	On
-13		Outside
-12		Inside
	5	Inside
-13		On
-12		Outside

Points on a circle

3. Which of these points does not lie on the circle and state whether it lies inside or outside.

A	B	C
(-4, -3)	(4, 9)	(0,-5)

A	B	C
(-7, 0)	(7, 1)	(5,-5)

A	B	C
(-4, -8)	(9, -1)	

4. The point (-4, 2) lies on a circle with centre (0, 0). Find the equation of the circle in the form $x^2 + y^2 = r^2$ where r^2 is in the form $a\sqrt{b}$
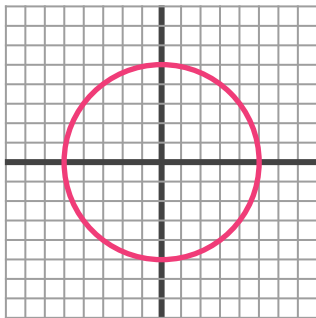
Answers

Points on a circle

1. The graph shows a circle with equation $x^2 + y^2 = 100$

Fill in the table

Point	Lies on the circle?
(-6, 8)	Yes
(8,4)	No
(0, -10)	Yes

2. Fill in the table

± 12	5	On
-13	$y \neq 0$	Outside
-12	$-5 < y < 5$	Inside
$-12 < y < 12$	5	Inside
-13	0	On
-12	$x > 5$ or $x < -5$	Outside

Points on a circle

3. Which of these points do not lie on the circle and state whether it lies inside or outside.

4. The point (-4, 2) lies on a circle with centre (0, 0). Find the equation of the circle.

A	B	C
(-4, -3)	(4, 9)	(0,-5)

Outside

A	B	C
(-7, 0)	(7, 1)	(5,-5)

Inside

A	B	C
(-4, -8)	(9, -1)	

Outside

$$x^2 + y^2 = 20$$