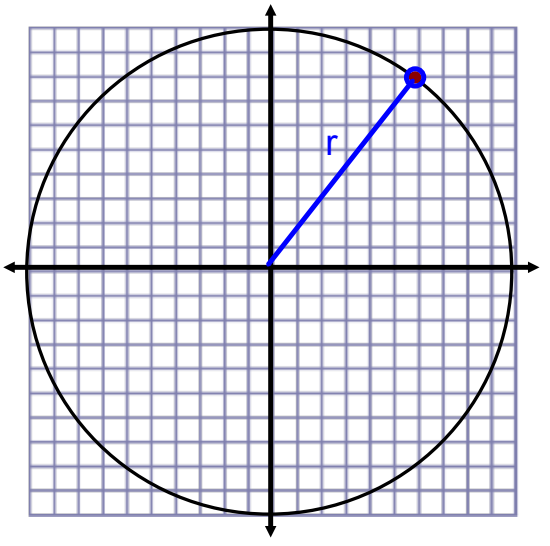
Thursday, March 5, 2020

Bell Work

The radius of the circle shown below is 10. Can you apply your understanding of length to determine the equation for a circle centred at the origin? Clearly show your math, and explain your thinking! Once you are done, discuss with a classmate to see if you are on the same page!



2.3 The Equation of a Circle

Vocabulary

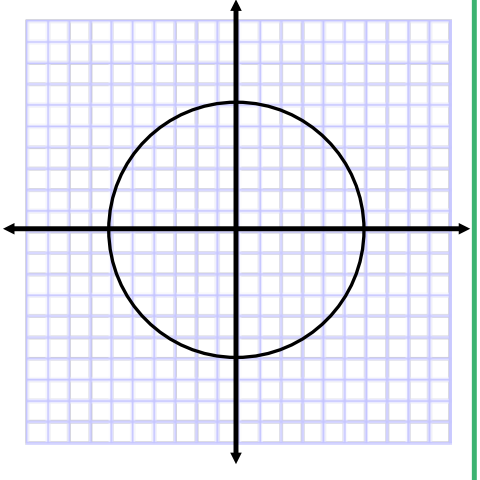
circle - the set of all points in a plane that are the same distance from a fixed point (the center)

radius - the distance from the centre to any point on the circle

diameter - twice the radius

circumference - the perimeter of a circle

Equation of a Circle (centered at the origin):

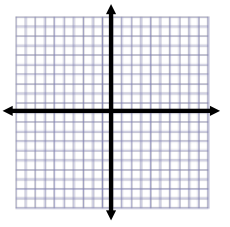


What is this the same as?

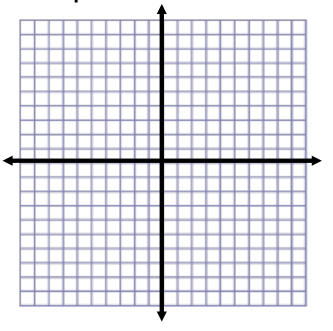
Practice Problems

1. Find the equation of a circle centred at the origin with radius 4.

2. Find the equation of a circle centred at the origin that passes through (3, 5). Also state the radius and the x and y intercepts of the circle.



3. A raindrop falls into a puddle and causes a circular ripple to spread out. The radius of the ripple grows at a steady rate of 5 cm/s. What equation would model the ripple exactly 6 s after it lands in the puddle?



4. Two satellites are orbiting the moon. The path of one has the equation $x^2 + y^2 = 1\ 440\ 000$. The other satellite is 200 m closer to the moon than the first. In one orbit, how much further does the first satellite travel than the second one?