

G.GPE.B.4: Circles in the Coordinate Plane

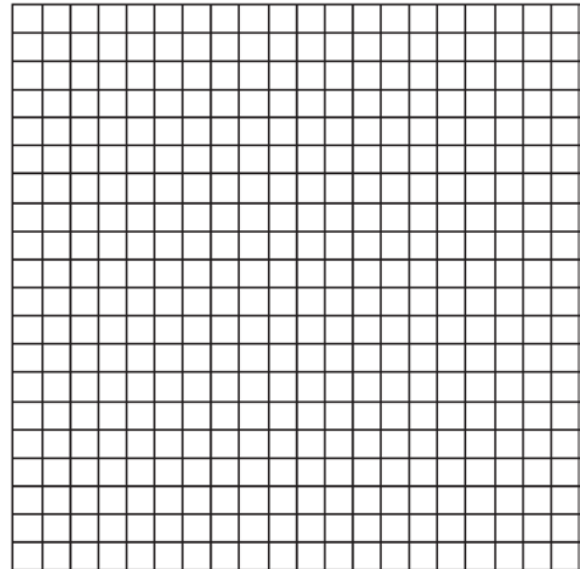
- 1 The center of circle Q has coordinates $(3,-2)$. If circle Q passes through $R(7,1)$, what is the length of its diameter?
- 1) 50
 - 2) 25
 - 3) 10
 - 4) 5

- 2 In the coordinate plane, the points $(2,2)$ and $(2,12)$ are the endpoints of a diameter of a circle. What is the length of the radius of the circle?
- 1) 5
 - 2) 6
 - 3) 7
 - 4) 10

- 3 A circle whose center is the origin passes through the point $(-5,12)$. Which point also lies on this circle?
- 1) $(10,3)$
 - 2) $(-12,13)$
 - 3) $(11,2\sqrt{12})$
 - 4) $(-8,5\sqrt{21})$

- 4 A circle has a center at $(1,-2)$ and radius of 4. Does the point $(3.4,1.2)$ lie on the circle? Justify your answer.

- 5 On the accompanying grid, graph a circle whose center is at $(0,0)$ and whose radius is 5. Determine if the point $(5,-2)$ lies on the circle.



G.GPE.B.4: Circles in the Coordinate Plane Answer Section

1 ANS: 3

$$r = \sqrt{(7-3)^2 + (1-(-2))^2} = \sqrt{16+9} = 5$$

REF: 061503geo

2 ANS: 1

Because the diameter is parallel to the y -axis, the length of the diameter may be calculated by subtracting the y values. If the diameter is $12 - 2 = 10$, the radius is 5.

REF: 010426a

3 ANS: 3

$$\sqrt{(-5)^2 + 12^2} = \sqrt{169} \quad \sqrt{11^2 + (2\sqrt{12})^2} = \sqrt{121 + 48} = \sqrt{169}$$

REF: 011722geo

4 ANS:

Yes. $(x-1)^2 + (y+2)^2 = 4^2$

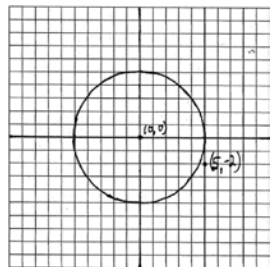
$$(3.4-1)^2 + (1.2+2)^2 = 16$$

$$5.76 + 10.24 = 16$$

$$16 = 16$$

REF: 081630geo

5 ANS:



The point $(5, -2)$ does not lie on the circle.

REF: 080230a