G.GPE.A.1: Equations of Circles 3a

1. Which equation represents a circle whose center is (3, -2)?
   1) \((x + 3)^2 + (y - 2)^2 = 4\)
   2) \((x - 3)^2 + (y + 2)^2 = 4\)
   3) \((x + 2)^2 + (y - 3)^2 = 4\)
   4) \((x - 2)^2 + (y + 3)^2 = 4\)

5. What is an equation of a circle with center (7, -3) and radius 4?
   1) \((x - 7)^2 + (y + 3)^2 = 4\)
   2) \((x + 7)^2 + (y - 3)^2 = 4\)
   3) \((x - 7)^2 + (y + 3)^2 = 16\)
   4) \((x + 7)^2 + (y - 3)^2 = 16\)

2. Which equation represents circle O with center (2, -8) and radius 9?
   1) \((x + 2)^2 + (y - 8)^2 = 9\)
   2) \((x - 2)^2 + (y + 8)^2 = 9\)
   3) \((x + 2)^2 + (y - 8)^2 = 81\)
   4) \((x - 2)^2 + (y + 8)^2 = 81\)

6. What is the equation of a circle with center (−3, 1) and radius 7?
   1) \((x + 3)^2 + (y + 1)^2 = 7\)
   2) \((x + 3)^2 + (y - 1)^2 = 49\)
   3) \((x + 3)^2 + (y - 1)^2 = 7\)
   4) \((x + 3)^2 + (y - 1)^2 = 49\)

3. What is an equation of a circle with its center at (−3, 5) and a radius of 4?
   1) \((x + 3)^2 + (y + 5)^2 = 16\)
   2) \((x + 3)^2 + (y - 5)^2 = 16\)
   3) \((x + 3)^2 + (y + 5)^2 = 4\)
   4) \((x + 3)^2 + (y - 5)^2 = 4\)

7. What is an equation of the circle with center (−5, 4) and a radius of 7?
   1) \((x - 5)^2 + (y + 4)^2 = 14\)
   2) \((x - 5)^2 + (y + 4)^2 = 49\)
   3) \((x + 5)^2 + (y - 4)^2 = 14\)
   4) \((x + 5)^2 + (y - 4)^2 = 49\)

4. Which equation represents the circle whose center is (−2, 3) and whose radius is 5?
   1) \((x - 2)^2 + (y + 3)^2 = 5\)
   2) \((x + 2)^2 + (y - 3)^2 = 5\)
   3) \((x + 2)^2 + (y - 3)^2 = 25\)
   4) \((x - 2)^2 + (y + 3)^2 = 25\)

8. What is an equation of the circle with a radius of 5 and center at (1, −4)?
   1) \((x + 1)^2 + (y - 4)^2 = 5\)
   2) \((x - 1)^2 + (y + 4)^2 = 5\)
   3) \((x + 1)^2 + (y - 4)^2 = 25\)
   4) \((x - 1)^2 + (y + 4)^2 = 25\)
9 The equation of a circle with its center at \((-3, 5)\) and a radius of 4 is
1) \((x + 3)^2 + (y - 5)^2 = 4\)
2) \((x - 3)^2 + (y + 5)^2 = 4\)
3) \((x + 3)^2 + (y - 5)^2 = 16\)
4) \((x - 3)^2 + (y + 5)^2 = 16\)

10 What is the equation of a circle with its center at \((5, -2)\) and a radius of 3?
1) \((x - 5)^2 + (y + 2)^2 = 3\)
2) \((x - 5)^2 + (y + 2)^2 = 9\)
3) \((x + 5)^2 + (y - 2)^2 = 3\)
4) \((x + 5)^2 + (y - 2)^2 = 9\)

11 What is the equation of a circle whose center is 4 units above the origin in the coordinate plane and whose radius is 6?
1) \(x^2 + (y - 6)^2 = 16\)
2) \((x - 6)^2 + y^2 = 16\)
3) \(x^2 + (y - 4)^2 = 36\)
4) \((x - 4)^2 + y^2 = 36\)

12 The center of a circular sunflower with a diameter of 4 centimeters is \((-2, 1)\). Which equation represents the sunflower?
1) \((x - 2)^2 + (y + 1)^2 = 2\)
2) \((x + 2)^2 + (y - 1)^2 = 4\)
3) \((x - 2)^2 + (y - 1)^2 = 4\)
4) \((x + 2)^2 + (y - 1)^2 = 2\)

13 What is an equation of a circle whose center is \((1, 4)\) and diameter is 10?
1) \(x^2 - 2x + y^2 - 8y = 8\)
2) \(x^2 + 2x + y^2 + 8y = 8\)
3) \(x^2 - 2x + y^2 - 8y = 83\)
4) \(x^2 + 2x + y^2 + 8y = 83\)

14 A graphic designer is drawing a pattern of four concentric circles on the coordinate plane. The center of the circles is located at \((-2, 1)\). The smallest circle has a radius of 1 unit. If the radius of each of the circles is one unit greater than the largest circle within it, what would be the equation of the fourth circle?
1) \((x - 2)^2 + (y + 1)^2 = 4\)
2) \((x + 2)^2 + (y - 1)^2 = 4\)
3) \((x - 2)^2 + (y + 1)^2 = 16\)
4) \((x + 2)^2 + (y - 1)^2 = 16\)

15 Write an equation of a circle whose center is \((-3, 2)\) and whose diameter is 10.
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Answer Section

1  ANS: 2  REF: 060008a
2  ANS: 4  REF: 011212ge
3  ANS: 2  REF: 060910ge
4  ANS: 3  REF: 011010ge
5  ANS: 3  REF: 011116ge
6  ANS: 4  REF: 010514b
7  ANS: 4  REF: 081305ge
8  ANS: 4  REF: 081110ge
9  ANS: 3  REF: 081209ge
10 ANS: 2  REF: 011601ge
11 ANS: 3  REF: 061210ge
12 ANS: 2  REF: 060110b
13 ANS: 1
   \[(x - 1)^2 + (y - 4)^2 = \left(\frac{10}{2}\right)^2\]
   \[x^2 - 2x + 1 + y^2 - 8y + 16 = 25\]
   \[x^2 - 2x + y^2 - 8y = 8\]
   REF: 011920geo
14 ANS: 4  REF: 010912b
15 ANS:
   If \( r = 5 \), then \( r^2 = 25 \). \( (x + 3)^2 + (y - 2)^2 = 25 \)
   REF: 011332ge