G.GPE.A.1: Equations of Circles 6

1 Which graph represents a circle with the equation $(x-5)^2 + (y+1)^2 = 9$?

1)

2)

3)

4)
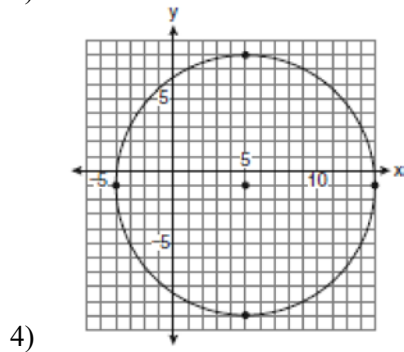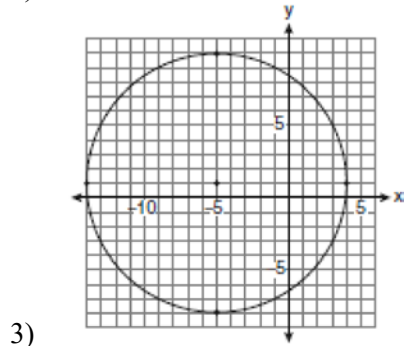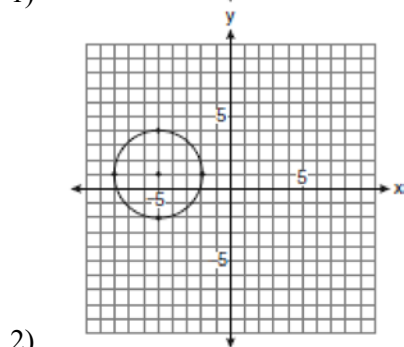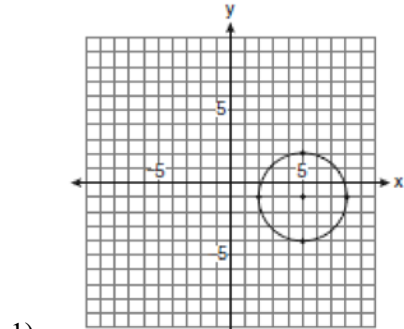
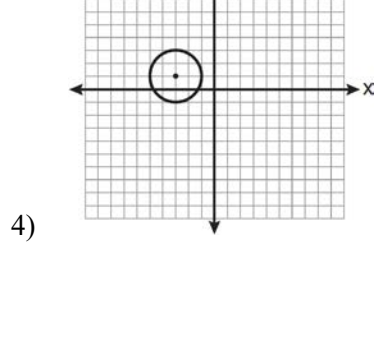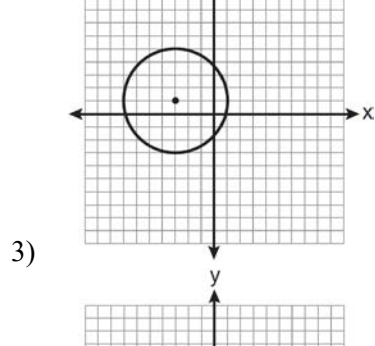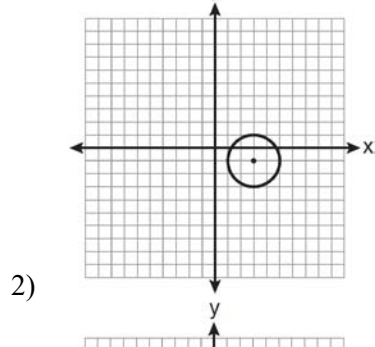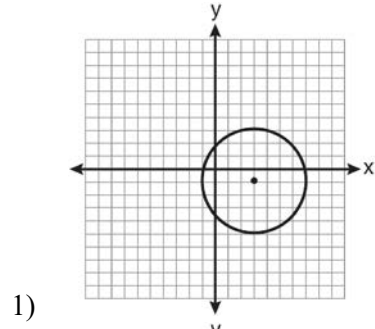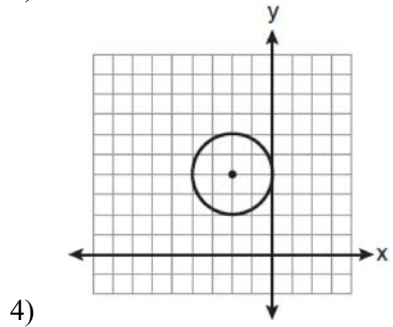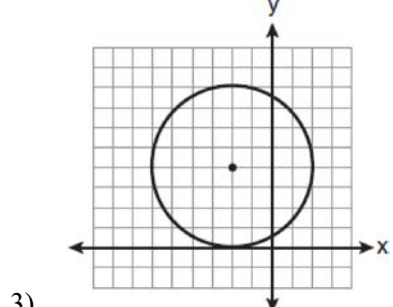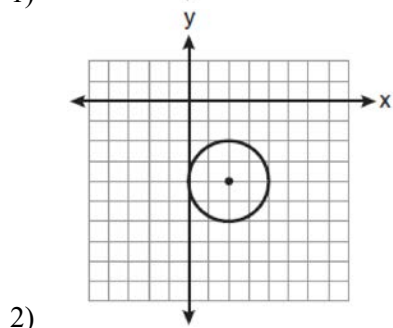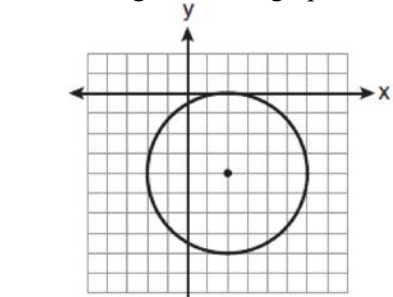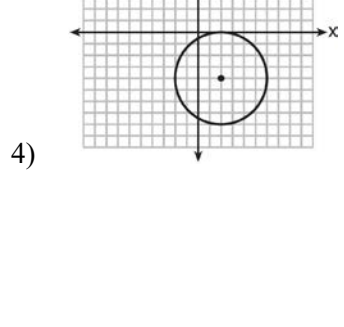2 Which graph represents a circle with the equation $(x-3)^2 + (y+1)^2 = 4$?

1)

2)

3)

4)

3 The equation of a circle is $(x-2)^2+(y+4)^2=4$. Which diagram is the graph of the circle?

1)

2)

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4)

4 Which graph represents a circle whose equation is $(x-2)^2+(y+4)^2=4$?

1)

2)

3)

4)
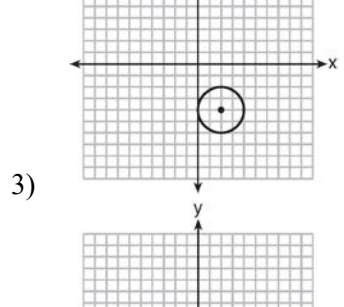
5 Which graph represents a circle whose equation is $(x+2)^2 + y^2 = 16$?

1)

2)

3)

4)

6 Which graph represents a circle whose equation is $x^2 + (y-1)^2 = 9$?

1)

2)

3)

4)

7 Which graph represents a circle whose equation is $x^2 + (y-2)^2 = 4$?

1)

2)

3)

4)

8 Which graph represents the graph of the equation $(x-1)^2 + y^2 = 4$?

1)

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4)

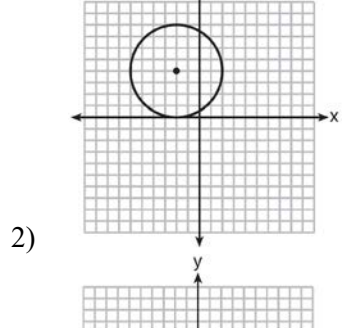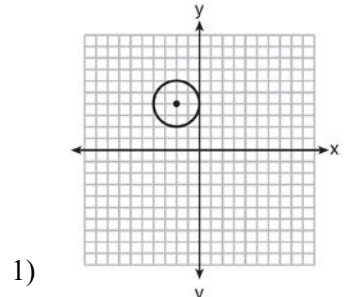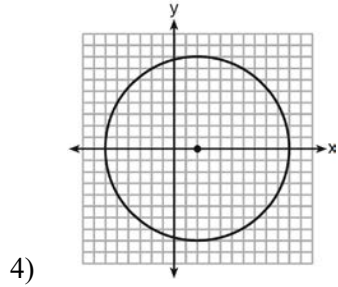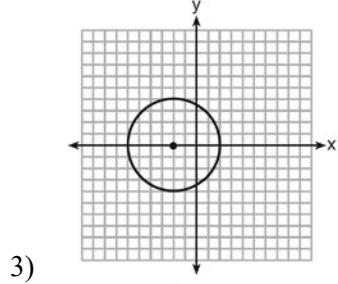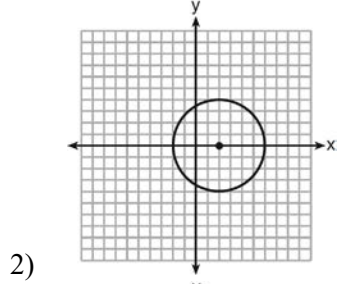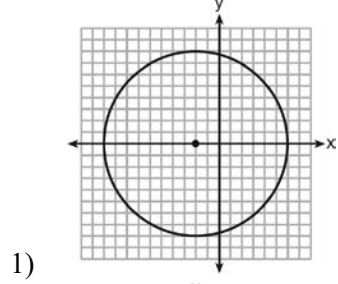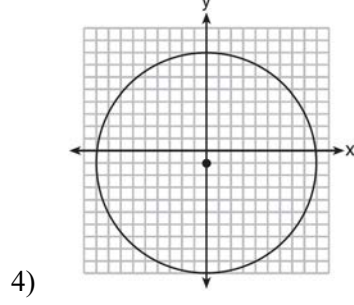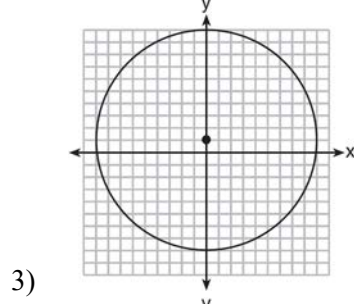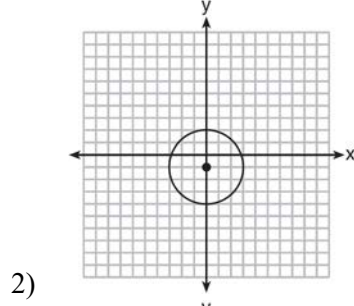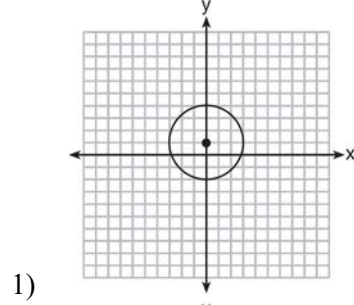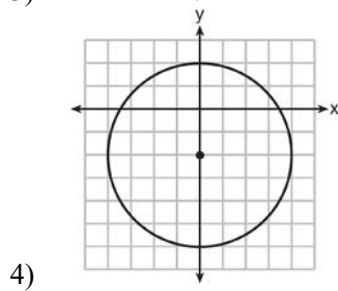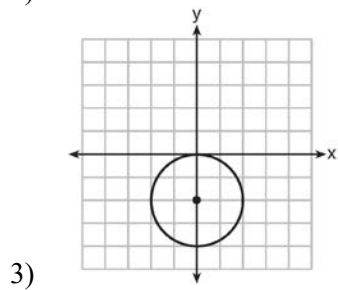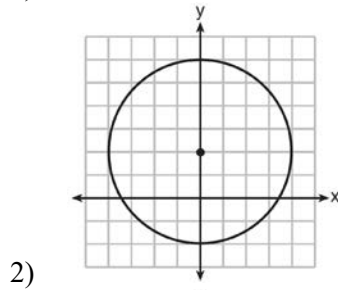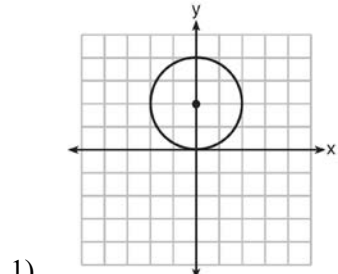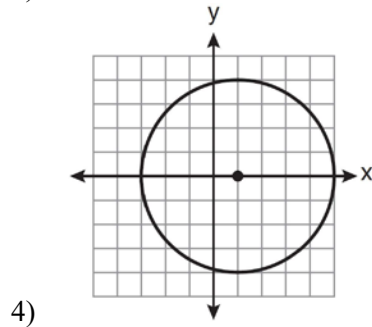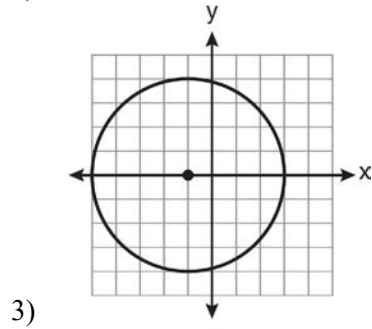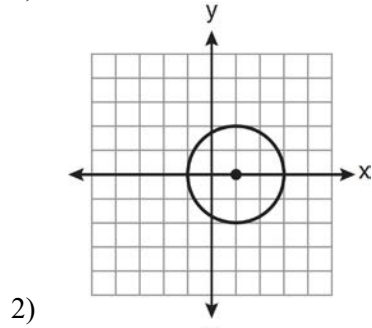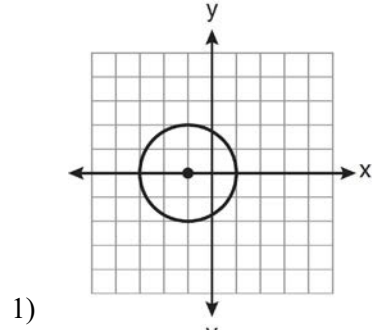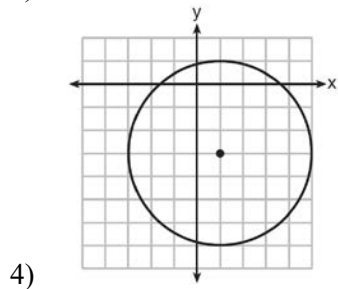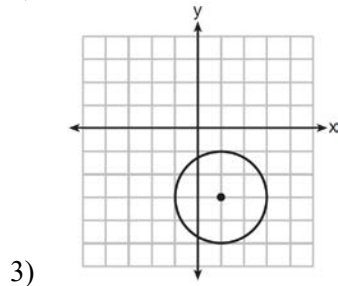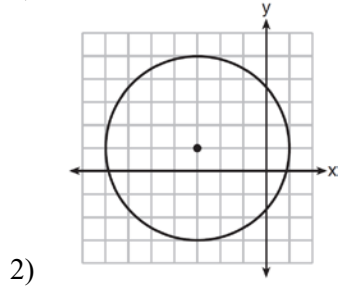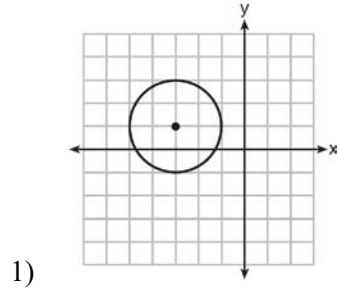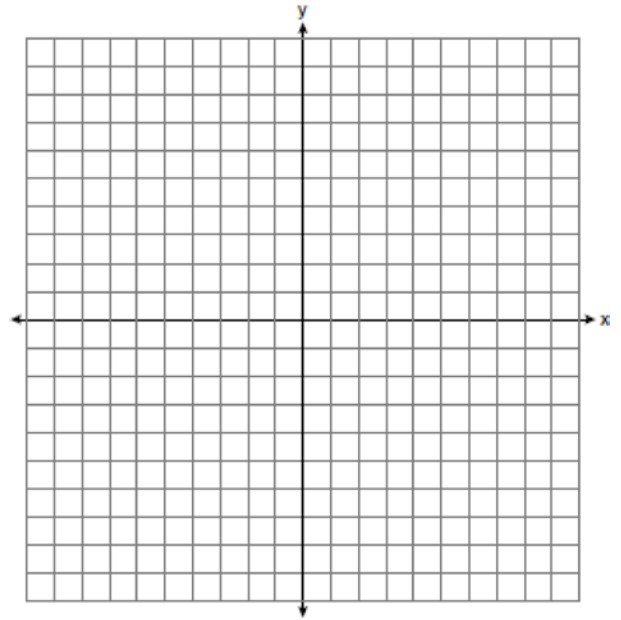9   Which graph represents a circle whose equation is $(x+3)^2 + (y-1)^2 = 4$?

1)

2)

3)

4)

10   John uses the equation $x^2 + y^2 = 9$ to represent the shape of a garden on graph paper.

   a Graph $x^2 + y^2 = 9$ on the accompanying grid.

   b What is the area of the garden to the *nearest square unit*?

11 On the set of axes below, graph and label circle A whose equation is $(x+4)^2 + (y-2)^2 = 16$ and circle B whose equation is $x^2 + y^2 = 9$. Determine, in simplest radical form, the length of the line segment with endpoints at the centers of circles A and B.
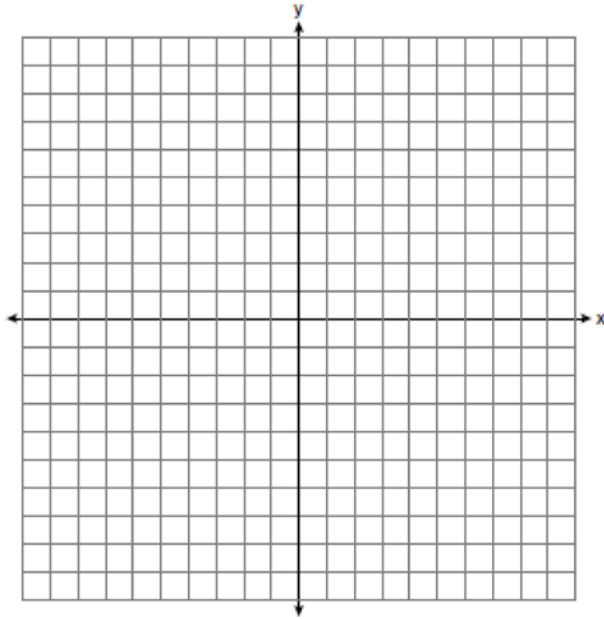
12 For a carnival game, John is painting two circles, V and M, on a square dartboard.

a On the accompanying grid, draw and label circle V, represented by the equation $x^2 + y^2 = 25$, and circle M, represented by the equation $(x-8)^2 + (y+6)^2 = 4$.
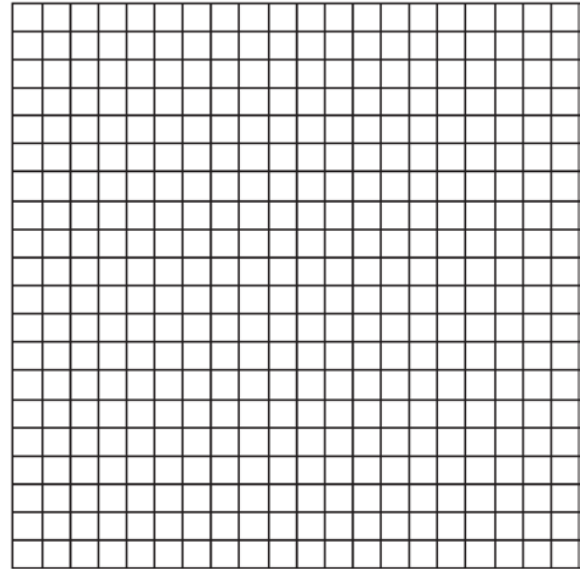
b A point, (x,y), is randomly selected such that $-10 \le x \le 10$ and $-10 \le y \le 10$. What is the probability that point (x,y) lies outside both circle V and circle M?

G.GPE.A.1: Equations of Circles 6
Answer Section

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  2 ANS: 2   REF: 011125ge
  3 ANS: 2   REF: 011020ge
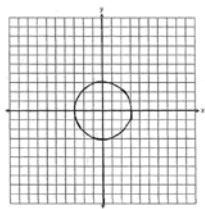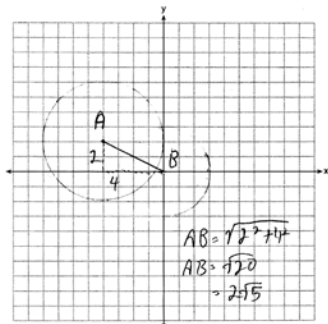 4 ANS: 3   REF: 011518ge
  5 ANS: 3   REF: 061220ge
  6 ANS: 1   REF: 061325ge
  7 ANS: 1   REF: 081324ge
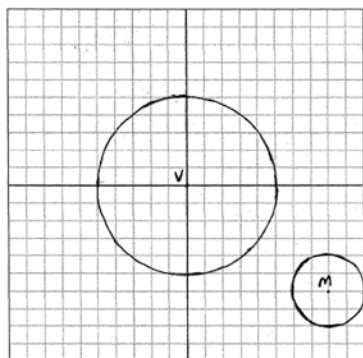 8 ANS: 2   REF: 081425ge
  9 ANS: 1   REF: 011614ge
10 ANS:

a) ; b) 28

REF: 010133a

11 ANS:

REF: 081537ge

12 ANS:

0.77. The dartboard is 20 x 20, with area of 400. $A = \pi r^2$, so the area of circle V is 25π and of circle M is 4π. The percentage of the area of the dartboard outside both circles is

$$\frac{400 - (25\pi + 4\pi)}{400} \cong 0.77$$

REF: 060334b