Completion /35

Secondary Math 2

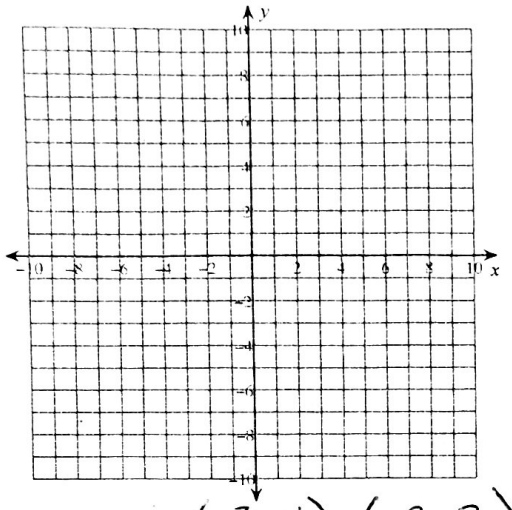
Name Key

Unit 7 Systems of Equations Review

Date _____ Period ____

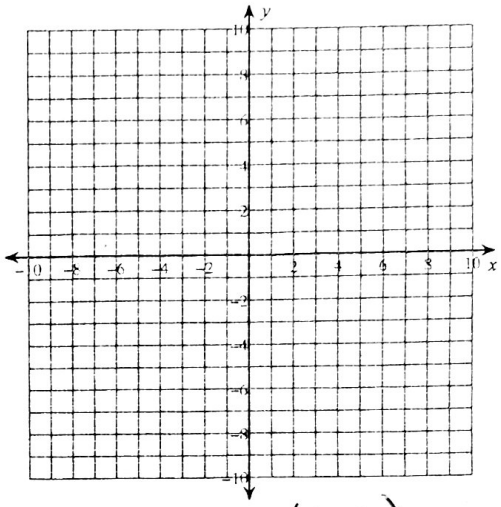
Solve the following systems by graphing.

1) $y = 2x^2 + 8x + 10$
$y = -2x - 2$



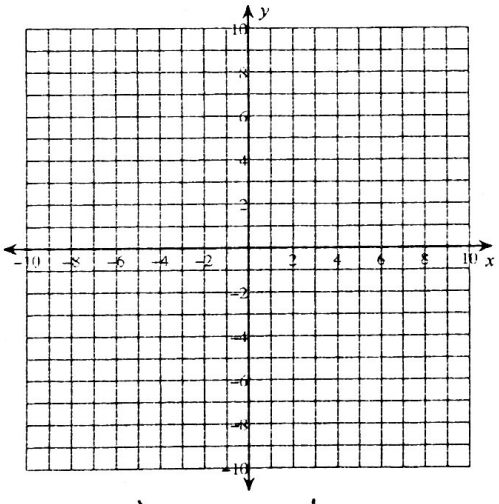
(-3, 4), (-2, 2)

2) $y = x^2 + 4x - 2$
$y = 6x - 3$



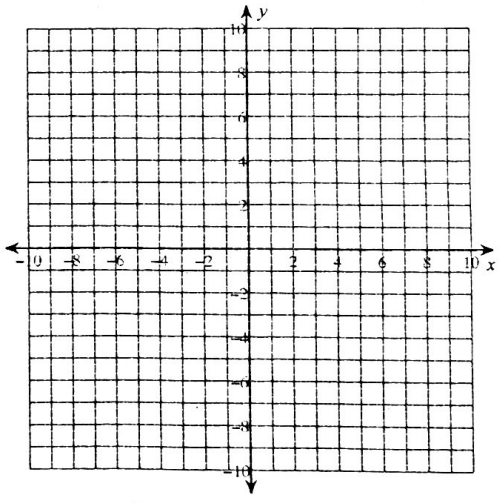
(1, 3)

3) $x^2 + y^2 = 9$
$y = x - 5$



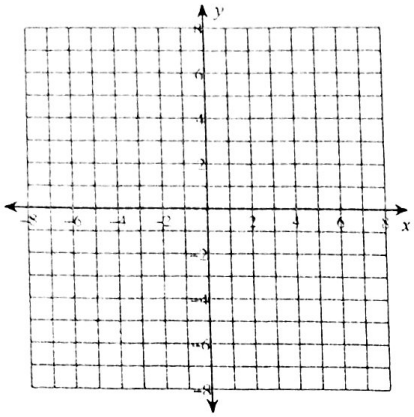
No Solution

4) $x^2 + y^2 = 25$
$y = \frac{3}{4}x$



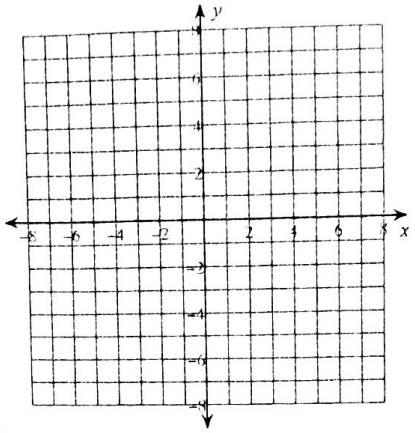
(4, 3), (-4, -3)

5) $x^2 + (y-3)^2 = 4$
$y = 2x + 3$



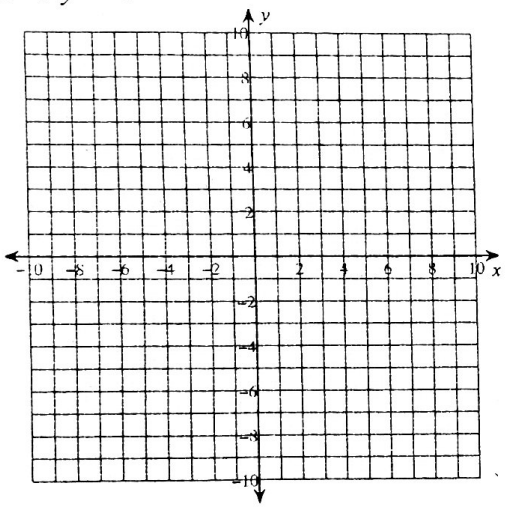
Approximate: $(-0.9, 1.2)$, $(0.9, 4.8)$

6) $y = -x^2 - 4x - 2$
$y = x - 2$



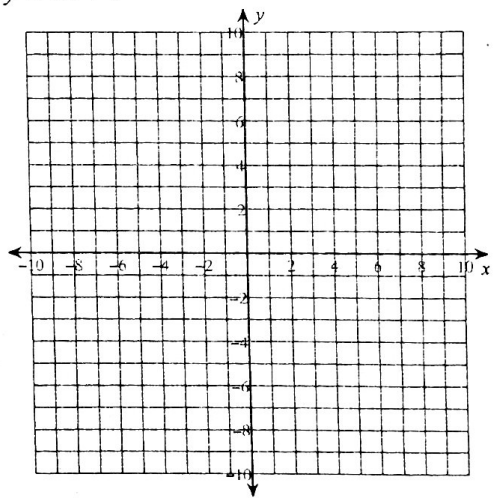
$(0, -2)$, $(-5, -7)$

7) $y = -x^2 + 1$
$x^2 + y^2 = 1$



$(-1, 0)$, $(0, 1)$, $(1, 0)$

8) $y = -2(x+3)(x-1)$
$y = 2x + 6$



$(-3, 0)$, $(0, 6)$

9) Sketch three possible systems that have 2 solutions.

10) What is the equation of a circle? Where does it come from?

$(x-h)^2 + (y-k)^2 = r^2$

It comes from the Pythagorean Theorem.

Identify the center and radius of the circle.

11) $(x-6)^2 + (y-4)^2 = 16$

C: (6, 4)

r = 4

12) $(x-3)^2 + (y+3)^2 = 12$

C: (3, -3)

$r = 2\sqrt{3}$

Use the information provided to write the equation of each circle.

13) Center: (–6, –10)
Radius: 5

$(x+6)^2 + (y+10)^2 = 25$

14) Center: (–8, –13)
Radius: 4

$(x+8)^2 + (y+13)^2 = 16$

15) Center: (16, 13)
Point on Circle: (18, 15)

$(x-16)^2 + (y-13)^2 = 8$

16) Center: (1, 13)
Point on Circle: (2, 10)

$(x-1)^2 + (y-13)^2 = 10$

17) Center: (0, 12)
Point on Circle: (–7, 12)

$x^2 + (y-12)^2 = 49$

18) Center: (–7, –16)
Point on Circle: (–4, –16)

$(x+7)^2 + (y+16)^2 = 9$

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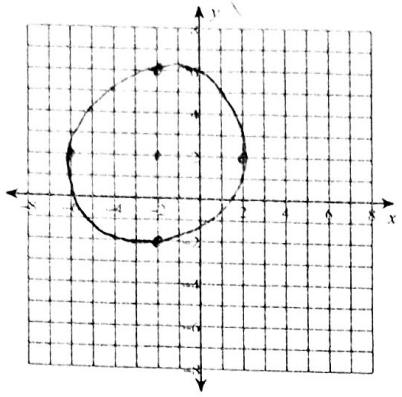
$x^2 + (y-12)^2 = 49$

18) Center: (−7, −16)
Point on Circle: (−4, −16)

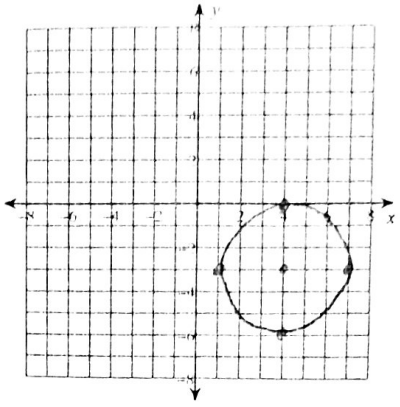
$(x+7)^2 + (y+16)^2 = 9$

Identify the center and radius of each. Then sketch the graph.

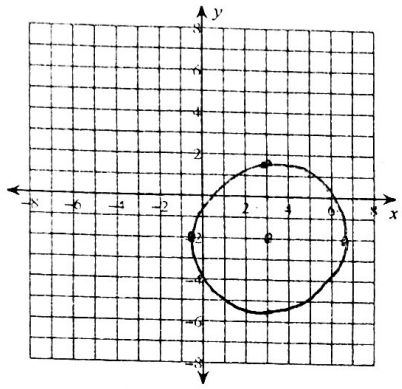
19) $(x+2)^2 + (y-2)^2 = 16$



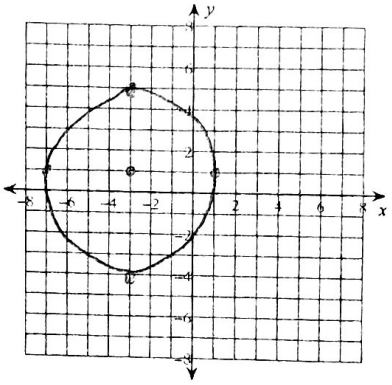
20) $(x-4)^2 + (y+3)^2 = 9$



21) $(x-3)^2 + (y+2)^2 = 13$

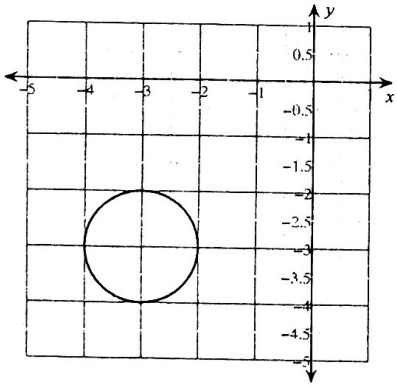


22) $(x+3)^2 + (y-1)^2 = 16$



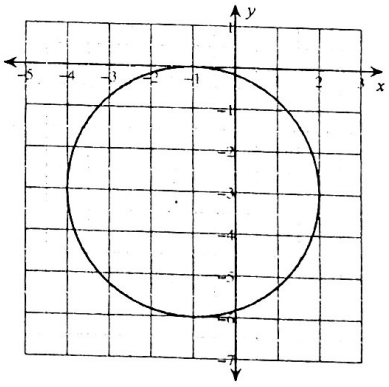
Use the information provided to write the equation of each circle.

23)



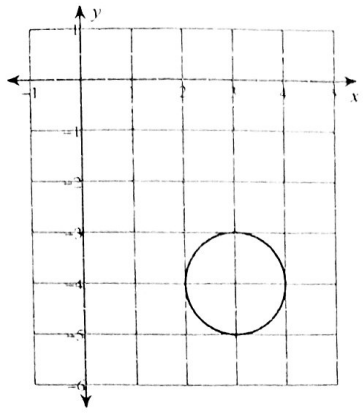
$(x+3)^2 + (y+3)^2 = 1$

24)



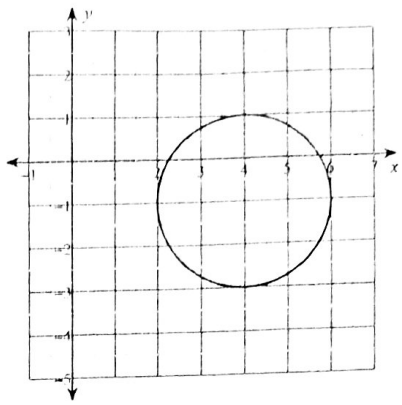
$(x+1)^2 + (y+3)^2 = 9$

25)



$(x-3)^2 + (y+4)^2 = 1$

26)



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

Solve each system algebraically.

27) $y = x^2 - 5x + 1$
$y = x + 1$

$(0,1), (6,7)$

28) $y = x^2 - x - 12$
$y = x + 3$

$(-3,0), (5,8)$

29) $x^2 + (y+2)^2 = 16$
$y = x + 2$

$(0,2), (-4,-2)$

30) $y = x^2 + 4x + 3$
$y = 2x + 6$

$(-3,0), (1,8)$

31) $(x+1)^2 + (y-4)^2 = 3$
$y = -x$

No solution

32) $y = 3x - 2$
$x^2 - 4y = 8$

$(0, -2)$, $(12, 34)$

33) The sum of two numbers is 24. The sum of their squares is ~~388~~ 338. Find the value of the two numbers.

17 & 7

34) A rectangle has area of 126 cm^2 and has a length that is 5cm longer than the width:

a. Write a systems of equations to represent this rectangle.

$L \cdot W = 126$
$L = W + 5$

b. Solve your system for the length and the width.

$W = 9$ cm, $L = 14$ cm

35) The perimeter of a rectangle is 52 cm. The area of the rectangle is 160 cm^2.

a. Write a system of equations to represent the rectangle.

$2L + 2W = 52$
$L \cdot W = 160$

b. Solve your system for the dimensions of the length and width.

10 cm & 16 cm