Name_____ Date:_____

Chapter 10A Assignment Schedule

3/5/2013 3/6/2013	C9 Test & 10-1: Distance and Midpoint	A30: 565(10-21)
3/7/2013	Review Completing the Square	A31: 273(14, 15, 31) & 290(21-26)
3/8/2013	10-2(1): Parabolas y=	A32: 571(7, 9, 11, 14, 17, 48-50)

3/11/2013	10-2(2): Parabolas x=	A33: 571(8, 10, 15, 18, 53-56)
3/12/2013 3/13/2013	10-3: Circles & Review	A34: 578(16-24, 27)
3/14/2013	Parabola and Circle Graphing Test	A35: Formula handout
3/15/2013	No School - Furlough	

Name_____ Date:_____

Completing the Square Review & Introduction to Parabolas in Vertex Form

Solving equations of the form $y = ax^2 + bx + c = 0$ by completing the square:

Ex 1) Solve $2x^2 + 11x + 15 = 0$

1. Subtract c from both sides:

2. Divide each term by a:

3. Find the number that makes the left a perfect square, add it to both sides *(Hint: ÷ by 2 and square it)*

4. Rewrite the left as a perfect square and solve using the square root property.

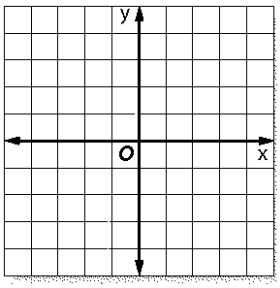
Ex2) $x^2 + 2x + 5 = 0$

Analyzing Graphs of Quadratic Functions:

Direction of opening: If a is positive the graph opens _____ if a is negative it opens _____.

Vertex form: _____ Vertex: _____ Axis of Symmetry: _____

Ex 3) Analyze $y = (x - 3)^2 + 2$. Then draw its graph. Direction: up/down



Vertex: _____ Axis of Symmetry: _____

Ex 4) Write each quadratic function in vertex form, if not already in that form. Then, identify the vertex, axis of symmetry, and direction of opening.

A) $y = x^2 + 2x + 4$

B) $y = -2x^2 - 4x + 2$

Name_____ Date:_____

§10-2(1) Parabolas (y=)

Goal 1: Write _____ of parabolas in standard form. Goal 2: _____ parabolas.

Defns.: conic section _____ Sketch here:

parabola _____

focus _____

directrix _____

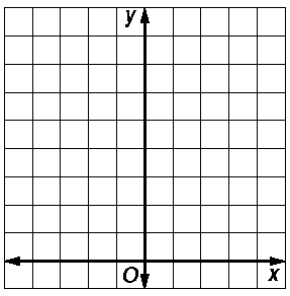
latus rectum _____

Standard Form of a parabola: _____
(really vertex form!)

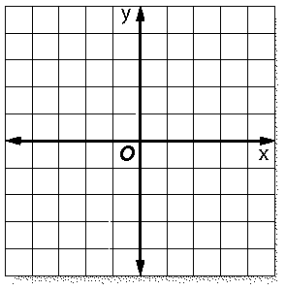
Information about Parabolas		
Form of Equation	**$y = a(x - h)^2 + k$**	**$x = a(y - k)^2 + h$**
Vertex		
Axis of Symmetry		
Focus		
Directix		
Direction of Opening		
Length of Latus Rectum		

Examples: A) Write $y = -x^2 - 2x + 3$ in "standard" form.
Identify the vertex, axis of symmetry, and direction of opening of the parabola.

B) Graph $y = 2x^2$



C) Graph $y = 2(x-1)^2 - 5$

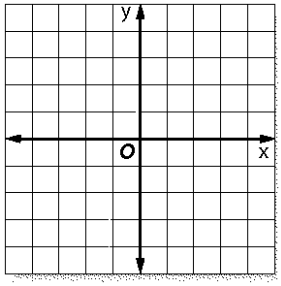


Name_____ Date:_____

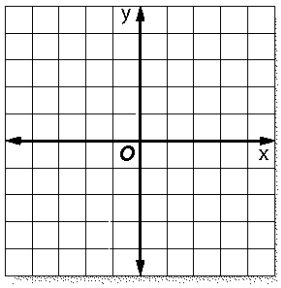
§10-2(1) Parabolas (x=)

Examples: A) Write $y = -x^2 - 2x + 3$ in "standard" form.
Identify the vertex, axis of symmetry, and direction
of opening of the parabola.

B) Graph $x + y^2 = 4y - 1$.

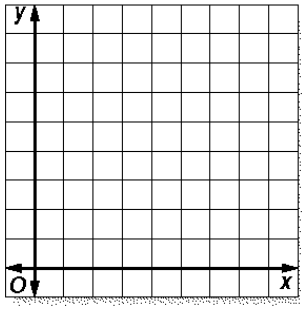


C) Graph $x - y^2 = 6y + 2$.



Name_____ Date:_____

§10-3 Circles and Review



Goal: _____ and _____ equations of circles.

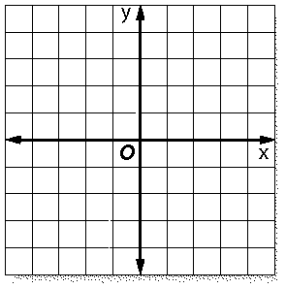
Defn. Equation of a circle: With center (h, k) and radius r:

_____.

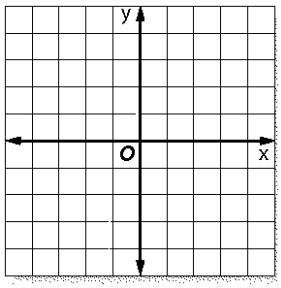
Examples:

A) Write an equation for a circle if the endpoints of the diameter are at (2, 8) and (2, –2).

B) Find the center and radius of the circle with equation $x^2 + y^2 = 16$. Then graph the circle.



C) Find the center and radius of the circle with equation $x^2 + y^2 + 6x - 7 = 0$. Then graph the circle.



Name_____ Date:_____

Review

Consider the segment connecting the points (-3, 5) and (9, 11).

1. Find the midpoint of this segment.

2. Find the length of the segment.

3. Circle P has a diameter $\overline{CD}$ If C is at (4, -3) and D is at (-3, 5), find the center of the circle and the length of the diameter.

Write each equation in vertex form, identify the vertex, axis of symmetry, and direction.

4. $y = 2x^2 - 8x + 1$

5. $y = -2x^2 + 6x + 1$

6. $y = \frac{1}{2}x^2 - 5x + 12$

7. Write the equation of the circle with center (4, -3) and radius 5.

8. The circle with equation $(x + 8)^2 + y^2 = 121$ has center _____ and radius _____.

9. Find the center and radius of the circle with equation $x^2 + y^2 + 4x - 6y - 3 = 0$.

Name_____ Date:_____

Practice Test

1. What is the midpoint of the line segment with endpoints at (12, 7) and (18, 19)?

A. (30, 26) **B.** (15, 13) **C.** (−6, −12) **D.** (3, 6) **1.** _____

2. Choose the midpoint of the line segment with endpoints at (5, 9) and (11, 15).

F. (8, 12) **G.** (16, 24) **H.** (6, 6) **J.** (−6, −6) **2.** _____

3. Find the distance between $A(12, 8)$ and $B(4, 2)$.

A. 14 units **B.** 100 units **C.** 10 units **D.** −10 units **3.** _____

4. What is the distance between $C(4, 3)$ and $D(7, 7)$?

F. −5 units **G.** 7 units **H.** 25 units **J.** 5 units **4.** _____

5. Write the equation of the parabola $y = x^2 + 10x + 16$ in standard form.

A. $y = (x + 5)^2 - 9$ **C.** $y = (x + 5)^2 + 16$

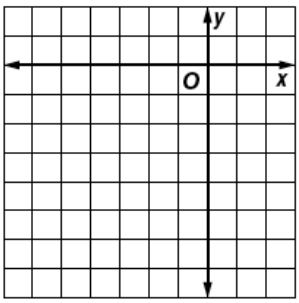
B. $y = (x + 5)^2 + 41$ **D.** $y = (x + 8)(x + 2)$ **5.** _____

6. Write an equation for the parabola with vertex (1, 0) if the length of the latus rectum is $\frac{1}{2}$ and the parabola opens down.

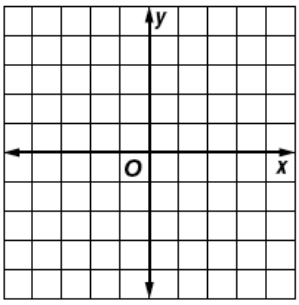
F. $y = -\frac{1}{2}(x - 1)^2$ **G.** $y = -2(x - 1)^2$ **H.** $x = -2(y - 1)^2$ **J.** $x = -\frac{1}{2}(y - 1)^2$ **6.** _____

Graph each equation.

7. $x^2 + y^2 + 4x + 6y - 3 = 0$ **7.**



8. $9x^2 + 4y^2 = 36$ **8.**



10. Which is the equation of a circle with center (2, 1) that passes through (2, 4)?

F. $(x - 2)^2 + (y - 1)^2 = 9$ **H.** $(x - 2)^2 + (y - 1)^2 = 3$

G. $(x + 2)^2 + (y + 1)^2 = 9$ **J.** $(x + 2)^2 + (y + 1)^2 = 3$ **10.** _____