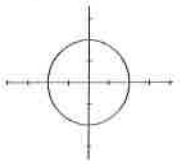
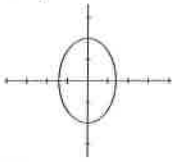
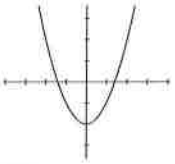
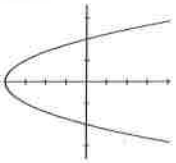
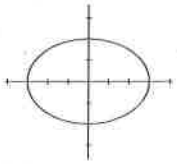
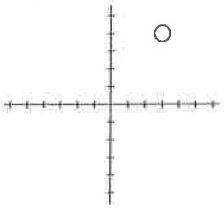
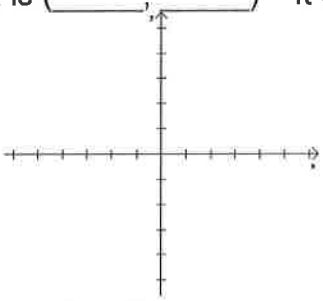
Name _____
Ellipse, Circle and Parabola Worksheet
AP Emphasis
Date _____Hour _____
Identify each equation as a parabola, circle or ellipse.

1. $y = 8(x-7)^2 + 10$
2. $\frac{x^2}{8} + \frac{y^2}{15} = 1$
3. $(x+2)^2 + (y-3)^2 = 4$
4. $x + y^2 - 2 = 0$
5. $3x^2 - 4x + 3y^2 + 2x - 50 = 0$
6. $x^2 + 3x + y^2 + 8x = 25$
7. $\frac{x^2}{256} + \frac{y^2}{1} = 1$
8. $(x-1)^2 + (y+3)^2 = 100$
9. $\left(x + \frac{2}{9}\right)^2 + \left(y + \frac{5}{9}\right)^2 = \frac{4}{9}$
10. $y = -3(x+2)^2 - 4$
11. $5x^2 + 25x + 3y^2 - 6y + 30 = 0$
12. $x^2 + 4x + y^2 - 8y + 60 = 0$
13. $9x^2 + 4y^2 = 72$
14. $x + 3y^2 + 4 = 0$
15. $x^2 + y^2 - 9 = 0$
16. $2x^2 + 3x + 2y^2 - 2 = 20$
17. $3x^2 + 5x + 9y^2 = 51$
18. $8x^2 - 3x + 8y^2 - 9 = 0$
19. $-5 + x^2 + y^2 = 0$
20. $x = 3y^2 + 4y - 8x$
21. $x^2 + y^2 = 15$
22. center is (5, 3); Major axis is parallel to the y axis; Length of the major axis is 12; Length of the minor axis is 8.
23. vertex is (2, 4); opens right; focus is (3, 4); directrix is x = 1
24. center is (3, 4); r = 3
25. Center is (3, 9); The major axis is parallel to the x-axis; Length of the major axis is 10; Length of the minor axis is 4.
26. vertex is (2, 6); opens up; focus is (2, 7); directrix is y = 5
27. vertex is (-2, 2); opens down; focus is (-2, 0); directrix y = 4
28. Center is (8, 5); The major axis is parallel to the y-axis; Length of the major axis is 20; Length of the minor axis is 14.
29. center is (-2, -6); r = 4
30. 
31. 
32. 
33. 
34. 
35. 

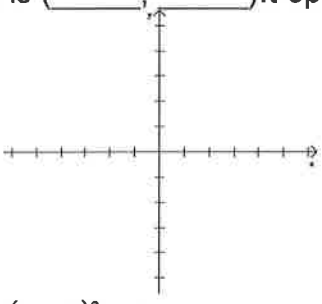
Name _____
Conic Sections (without hyperbolas)
Hour _____
Date _____

The first four problems are parabolas. You are to fill in the missing information and sketch the graph.

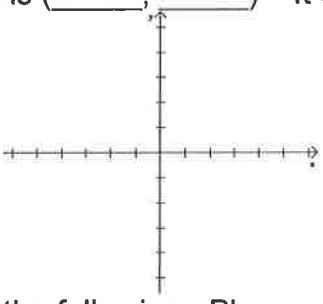
1. $y=(x-4)^2+2$
Vertex is (_____, _____) It opens _____.



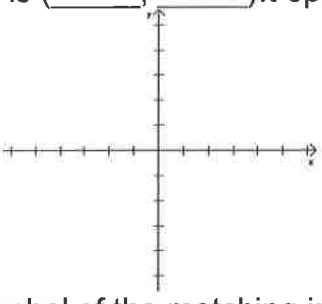
2. $y=-(x+3)^2-1$
Vertex is (_____, _____)It opens _____.



3. $x=(y-1)^2+3$
Vertex is (_____, _____) It opens _____.



4. $x=(y+2)^2-3$
Vertex is (_____, _____)It opens _____.



Match the following. Please write the letter and the symbol of the matching information under the equation.

5. $(x-3)^2+(y-2)^2=16$

6. $\frac{x^2}{9}+\frac{y^2}{4}=1$

7. $\frac{(x+2)^2}{4}+\frac{(y-1)^2}{16}=1$

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

9. $x^2+y^2=9$

10. $\frac{(x-2)^2}{9}+\frac{(y+3)^2}{16}=1$

A. Center is (0, 0); Radius is 3.

B. Center is (2, -3); The major axis is parallel to the y-axis; The length of the major axis is 8; The length of the minor axis is 6.

C. Center is (-2, 4); Radius is 1.

D. Center is (0, 0); The major axis is parallel to the x-axis; The length of the major axis is 6; The length of the minor axis is 4.

E. Center is (3, 2); Radius is 4.

F. Center is (-2, 1); The major axis is parallel to the y-axis; The length of the major axis is 8; The length of the minor axis is 4.

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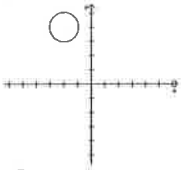

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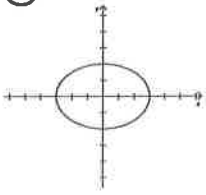

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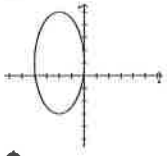

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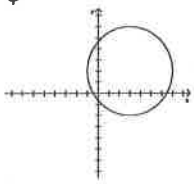

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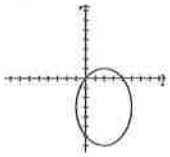

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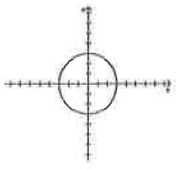

PreAP PreCalculus Name_____

Conics #4: Parabola, Circle, Ellipse

Classify each conic section.

1) $x^2 + y^2 - 8x + 2y + 16 = 0$

2) $x^2 + y^2 + 6x - 8y + 18 = 0$

3) $x^2 + y^2 + 2x + 6y + 5 = 0$

4) $-2x^2 + y + 1 = 0$

5) $-x^2 - 4x + y + 2 = 0$

6) $y^2 + x - 10y + 31 = 0$

7) $8x^2 + 5y^2 - 16x - 192 = 0$

8) $-x^2 - 12x + y - 32 = 0$

9) $x^2 + 16y^2 + 160y + 384 = 0$

10) $x^2 + 4y^2 - 24y = 0$

Write the equation of each conic section in standard form.

11) $x^2 + y^2 + 8x + 8y + 29 = 0$

12) $-x^2 - 4x + y - 5 = 0$

13) $4x^2 + 4y^2 + 4x - 32y + 61 = 0$

14) $x^2 + 4y^2 + 4x + 16y + 4 = 0$

15) $x^2 + y^2 + 4y - 21 = 0$

16) $x^2 + y^2 + 6x - 2y + 6 = 0$

17) $2x^2 + 20x + y + 55 = 0$

18) $4x^2 + 9y^2 + 16x - 54y + 61 = 0$

19) $8y^2 + x - 32y + 35 = 0$

20) $9x^2 + 25y^2 - 18x + 50y - 191 = 0$