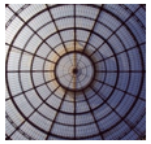
11.5 Identifying Conics

Warm-Up Wednesday

please turn in your calculator!!!

The following shows examples of the equations of each type of conic in $Ax^2 + Cy^2 + Dx + Ey + F = 0$ form. Can you figure out the rule for each? ☺



Circles

$2x^2 + 2y^2 - 4x - 16y - 10 = 0$

$-6x^2 - 6y^2 - 5x + 2y + 7 = 0$

$x^2 + y^2 + 14x + 20y + 6 = 0$

$3x^2 + 3y^2 - 27 = 0$

Ellipses

$5x^2 + 2y^2 - 10x - 8y - 10 = 0$

$7x^2 + 9y^2 + x - 2y + 4 = 0$

$8y^2 + x^2 - 14x + 6y + 6 = 0$

$15y^2 + 10x^2 + 45x + 25y - 8 = 0$

Parabolas

$y^2 + 3x + 6y - 9 = 0$

$-9x^2 + 6x - 4y + 2 = 0$

$4x^2 + 6x + 2y - 26 = 0$

$-y^2 - x - 2y - 27 = 0$

Hyperbolas

$10x^2 - 14y^2 + 6x + 2y - 100 = 0$

$-x^2 + 4y^2 + 16y + 32 = 0$

$-9x^2 + 2y^2 + 27x - 16y + 54 = 0$

$1.5x^2 - 4y^2 - 4.5x + 8y - 20 = 0$

11.5 Identifying Conics

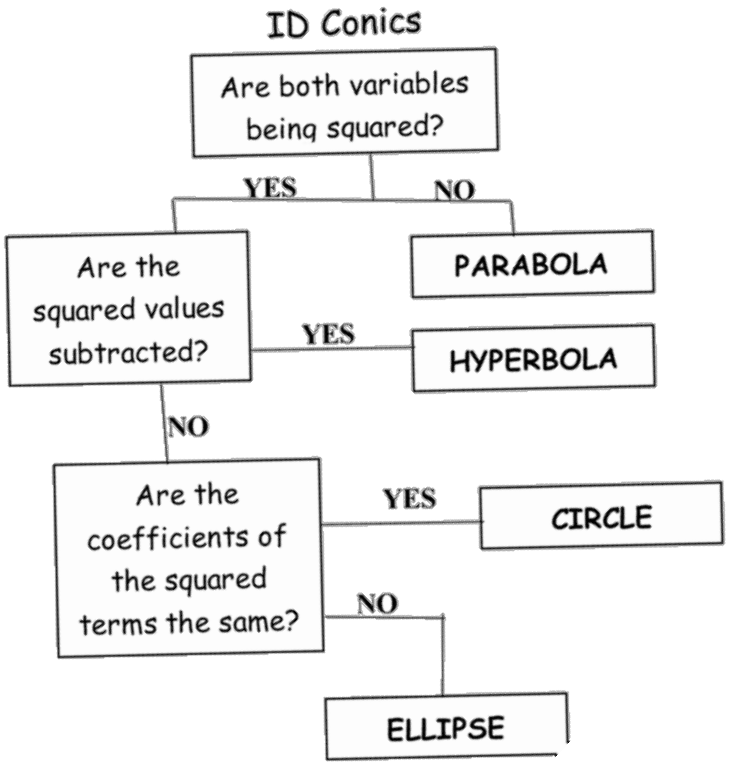
Write the rules somewhere in your conics book...

Circles: $A=C$ x^2/y^2 have same coeff.

Parabolas: 1 squared

Hyperbolas: x^2 or y^2 is negative

Ellipses: $A \neq C$



#1-17 ALL #12 BONUS ☺

Pre-AP Precal

Identifying Conics

Name _____ Date _____

Tell which conic is represented by the equation.

1. $2x^2 + 6y - 9 = 0$

2. $-2x^2 + 3y^2 + 6x - 3y - 9 = 0$

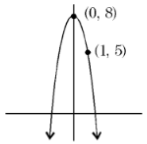
3. $16x^2 + 16y^2 - 27 = 0$

4. $-4x^2 - 20y^2 + 50 = 0$

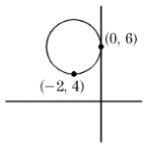
5. $y^2 + 2x + 8 = 0$

Write the equation of the graph.

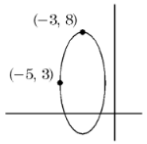
6.



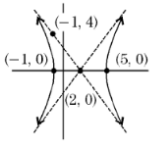
7.



8.



9.



10. Find an equation of the ellipse with vertices $(0, -1)$ and $(12, -1)$ and minor axis of length 6.

11. Find the equation of the circle with diameter endpoints $(1, 5)$ and $(-1, 7)$.

12. Find the equation of the parabola that opens to the left, has a vertex of $(-4, -1)$, and is congruent to the parabola $x = -10y^2$.

BONUS ☺

Graph each equation (label important features).

13. $\frac{y^2}{16} - \frac{x^2}{9} = 1$

14. $x^2 + y^2 - 10x - 12y + 45 = 0$ complete the square twice

15. $5y = x^2 - 10x + 60$ complete the square ONCE

16. $(y-5)^2 = 12(x-4)$

17. $\frac{(x-1)^2}{4} + \frac{(y-5)^2}{100} = 1$

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Pre-AP Precal Identifying Conics Baker 3/3/2015

Answer List

1. parabola
2. hyperbola
3. circle
4. ellipse
5. parabola
6. $y = -3x^2 + 8$
7. $(x+2)^2 + (y-6)^2 = 4$
8. $\frac{(x+3)^2}{4} + \frac{(y-3)^2}{25} = 1$
9. $\frac{(x-2)^2}{9} - \frac{y^2}{16} = 1$
10. $\frac{(x-6)^2}{36} + \frac{(y+1)^2}{9} = 1$
11. $x^2 + (y-6)^2 = 2$
12. $x + 4 = -10(y+1)^2$
13. $(0,0)$, $(0,\pm 4)$, $(0,\pm 5)$, $y = \pm\frac{4}{3}x$
14. $(5,6)$, $r = 4$
15. $(5,7)$, $(5,8.25)$, $y = 5.75$
16. $(4,5)$, $(7,5)$, $x = 1$
17. $(1,5)$; $(3,5)$, $(-1,5)$, $(1,15)$, $(1,-5)$; $(1, 5 \pm 4\sqrt{6})$

Catalog List

1. TRI JG 1
2. TRI JG 55
3. TRI JG 29
4. TRI JG 41
5. TRI JG 11
6. TRI JF 8
7. TRI JF 18
8. TRI JF 30
9. TRI JF 37
10. TRI JE 109
11. TRI JE 61
12. TRI JE 44
13. TRI JD 12
14. TRI JB 40
15. TRI JA 45
16. TRI JA 38
17. TRI JC 14