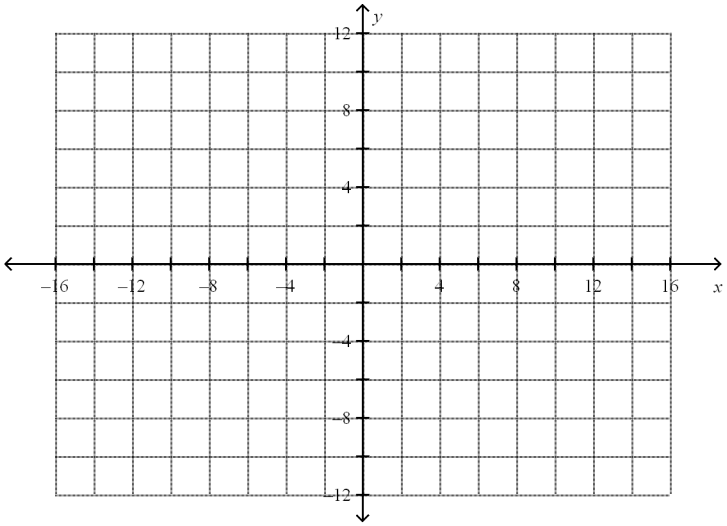
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

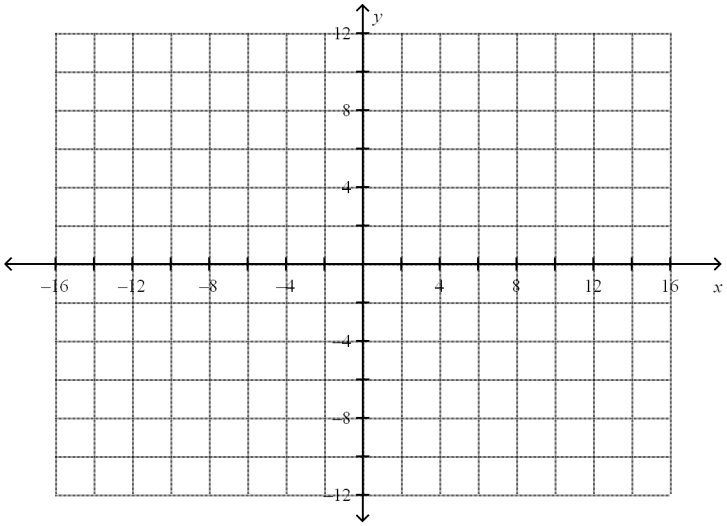
QuadraticRelations

Problem

1. Write the equation and graph a circle with center $(6,-3)$ containing the point $(3,-6)$.

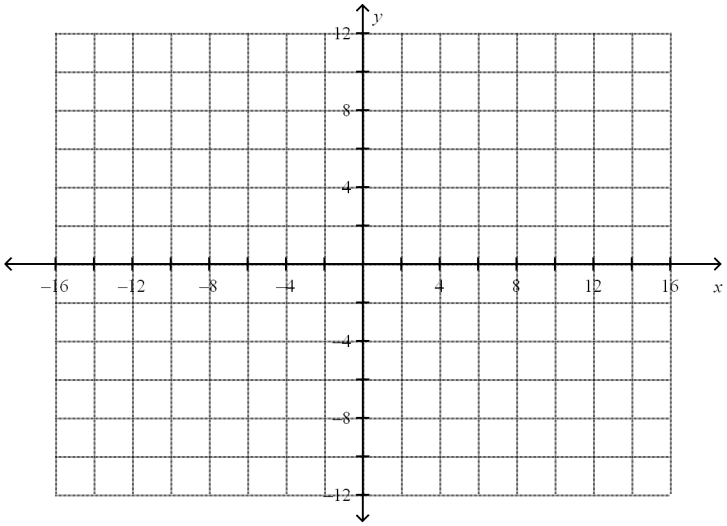


2. Write the equation and graph a circle with center $(-6,4)$ containing the point $(-2,3)$.



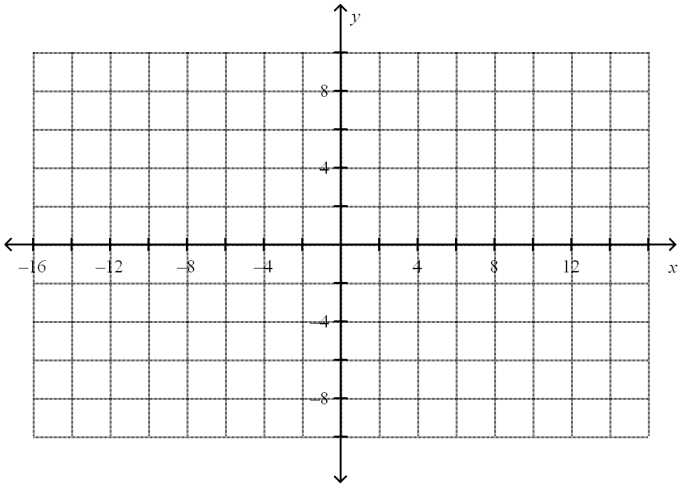
3. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$x^2 + y^2 + 10x - 12y + 52 = 0$



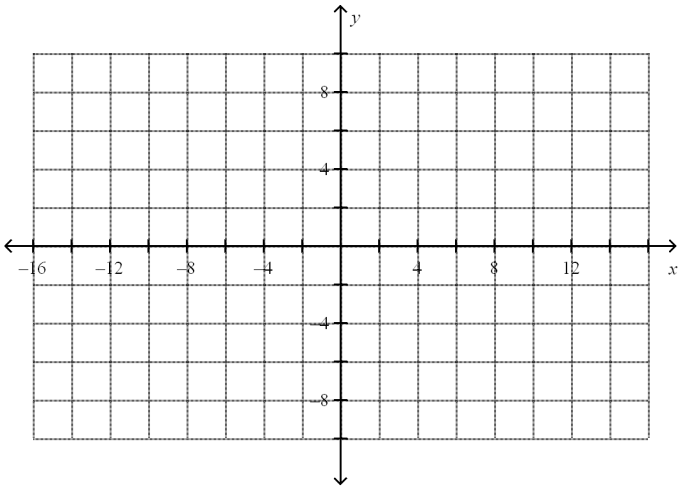
4. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$9x^2 + 9y^2 - 18x + 36y - 36 = 0$



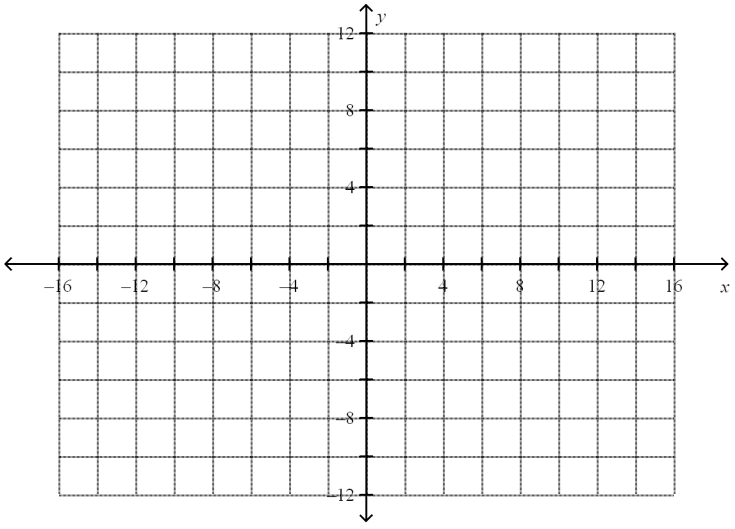
5. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$9x^2 + 36y^2 + 108x - 432y + 1296 = 0$



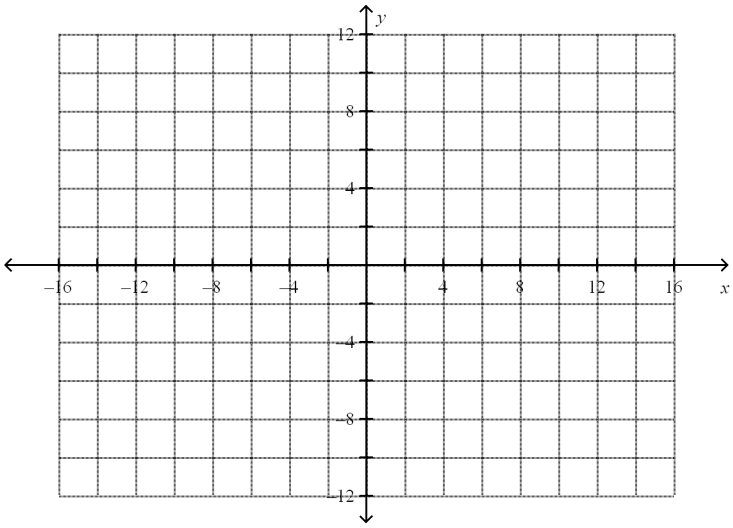
6. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$25x^2 + 9y^2 - 300x + 90y + 900 = 0$



7. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$16x^2 + 81y^2 + 192x - 324y - 396 = 0$

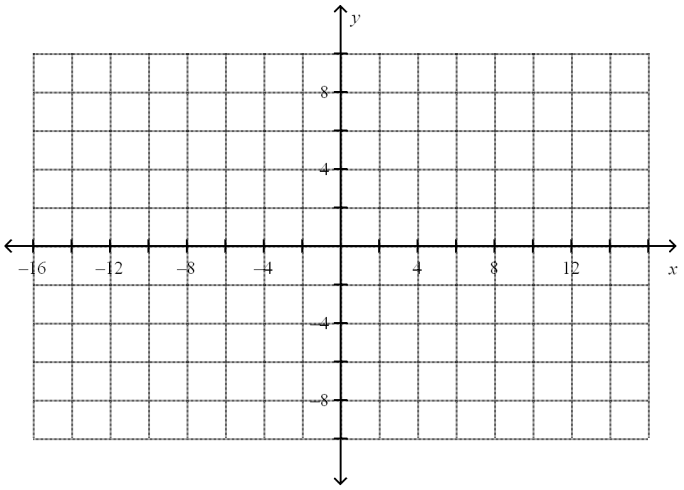


8. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$36x^2 - 100y^2 + 216x + 800y - 4876 = 0$

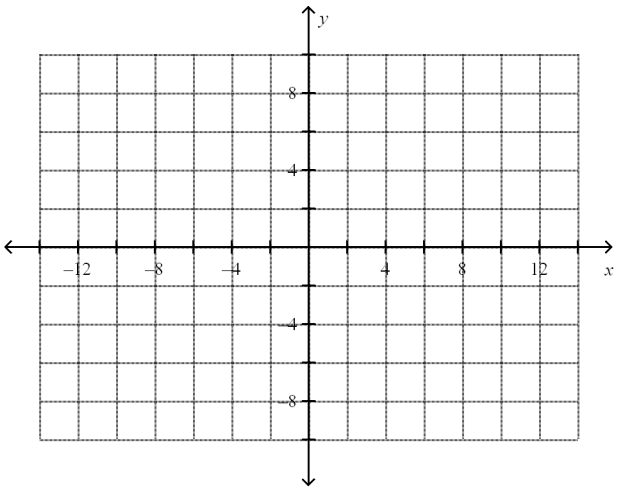
9. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$16x^2 - 49y^2 - 128x - 196y + 844 = 0$



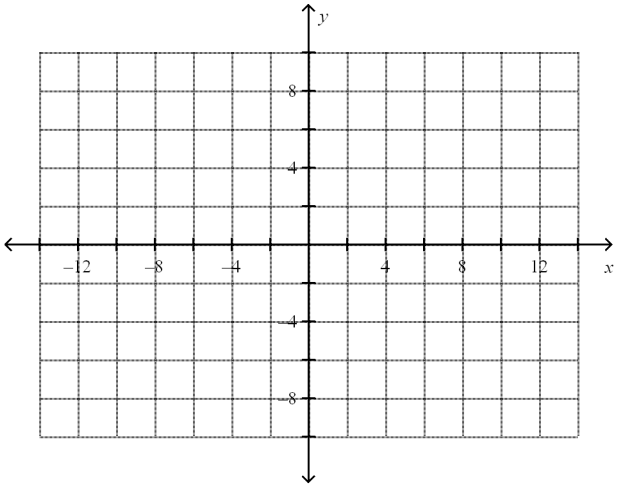
10. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$x = -5y^2 - 40y - 77$



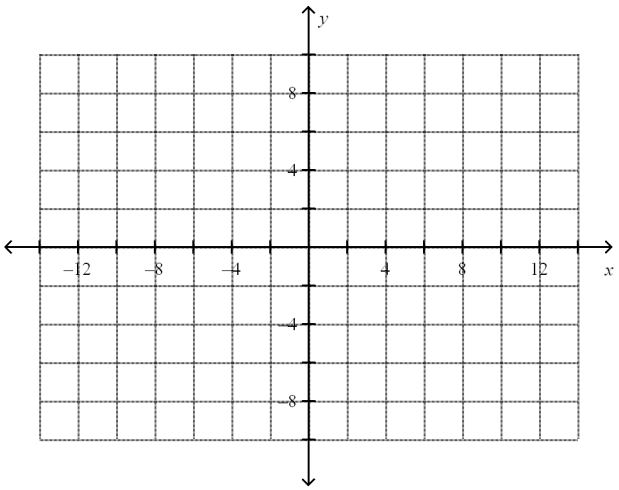
11. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$x = -6y^2 - 36y - 48$



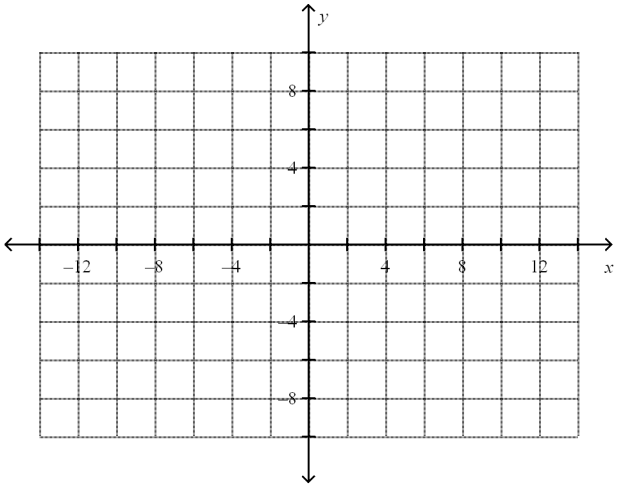
12. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

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



13. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$x = y^2 - 2y0$



14. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$x = 6y^2 - 12y + 3$

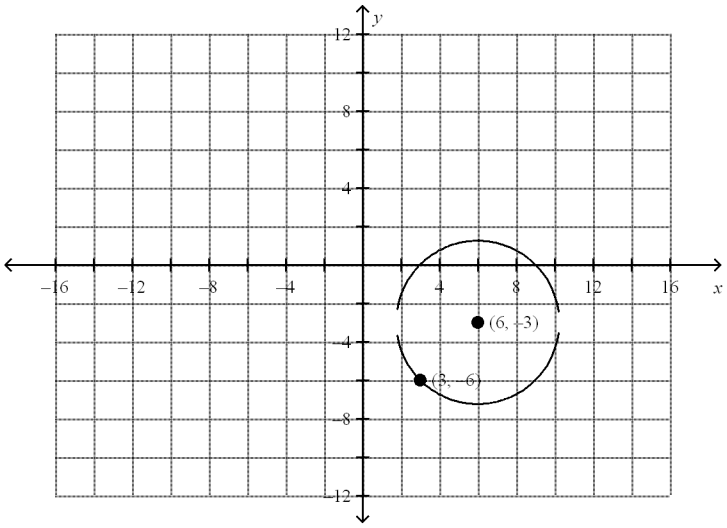
15. Identify the shape of the graph, transform it into standard form, and sketch the graph indicating the most important parts.

$x = y^2 - 8y + 12$

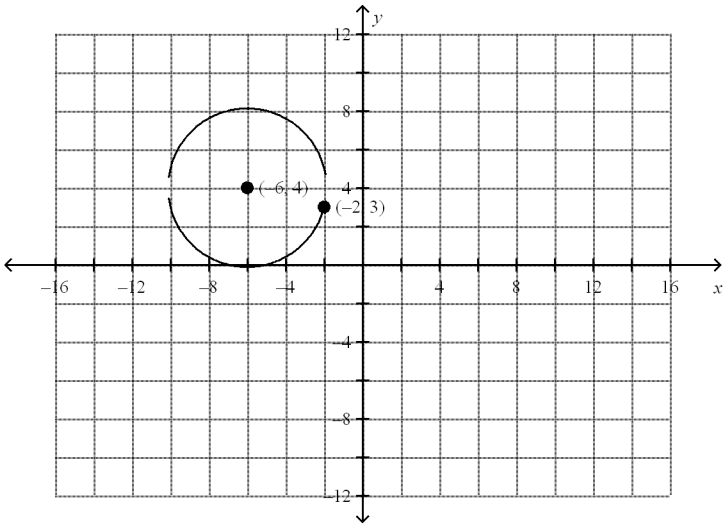
QuadraticRelations
Answer Section

PROBLEM

1. ANS:
   Circle: $(x-6)^2+(y+3)^2=18$ Center: $(6,-3)$ $r=4.24$

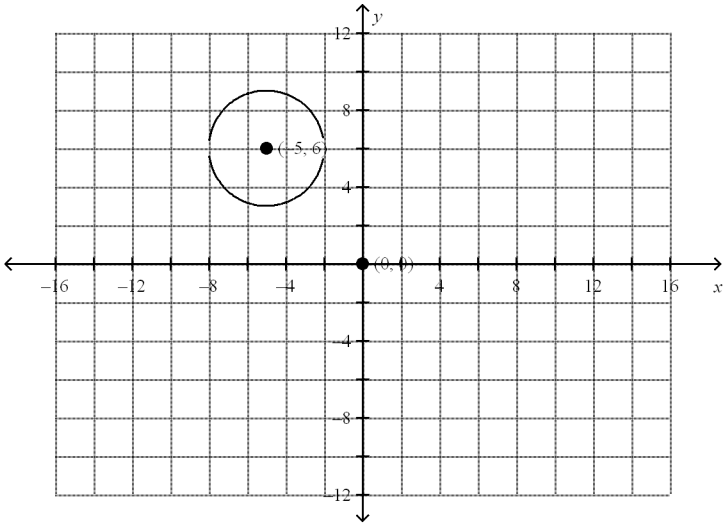


   PTS: 1
2. ANS:
   Circle: $(x+6)^2+(y-4)^2=17$ Center: $(-6,4)$ $r=4.12$

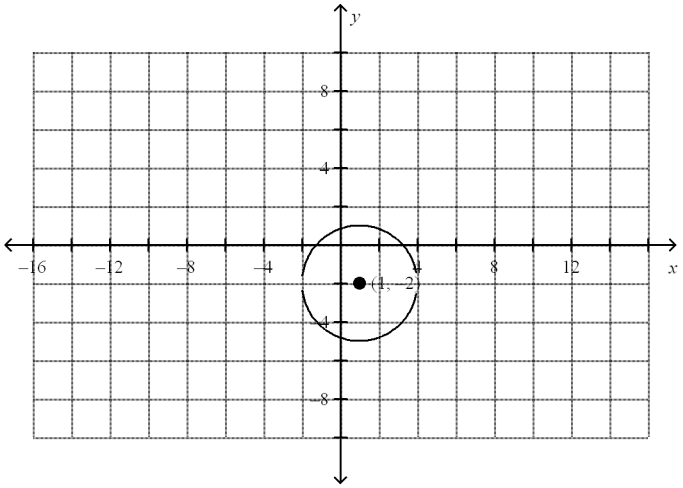


   PTS: 1

3. ANS:
   Circle: $(x+5)^2+(y-6)^2=9$ Center: $(-5,6)$ $r=9$



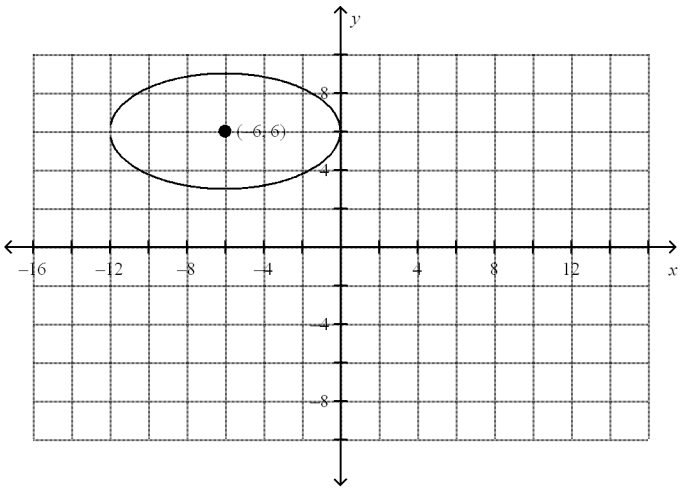
   PTS: 1
4. ANS:
   Circle: $(x-1)^2+(y+2)^2=9$ Center: $(1,-2)$ $r=3$



   PTS: 1

5. ANS:

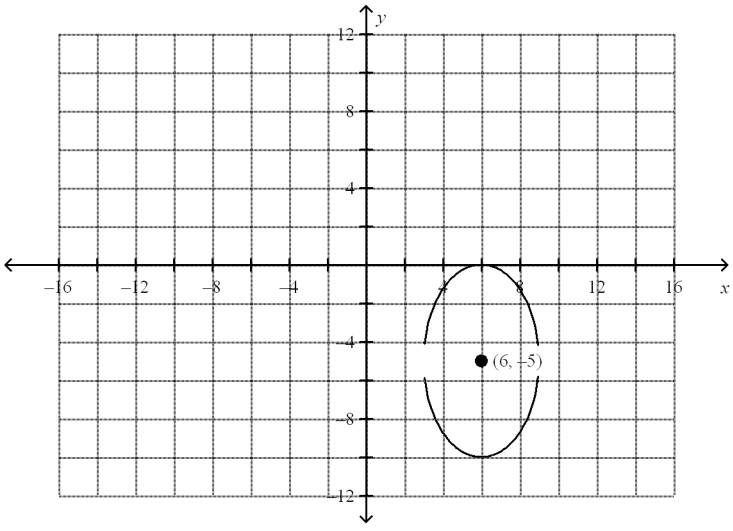
Ellipse: $\frac{(x+6)^2}{6^2}+\frac{(y-6)^2}{3^2}=1$ Center: $(-6,6)$ $a=6$ $b=3$



PTS: 1 NOT: Major axis may be parallel to either the x- or y- axes.

6. ANS:

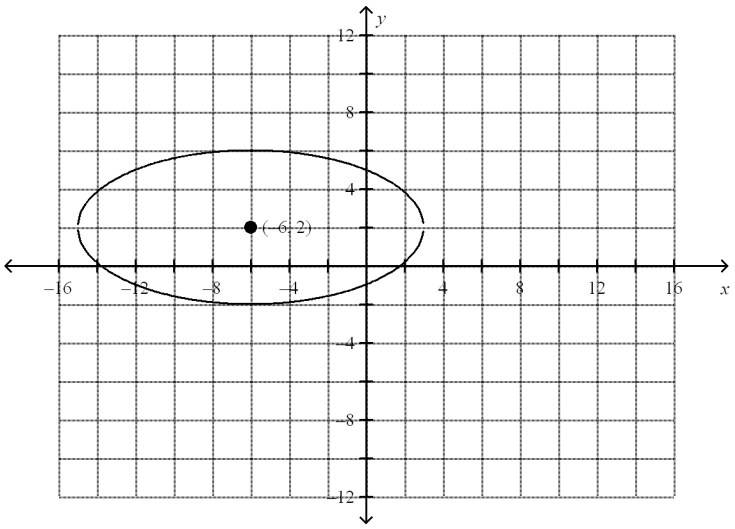
Ellipse: $\frac{(x-6)^2}{3^2}+\frac{(y+5)^2}{5^2}=1$ Center: $(6,-5)$ $a=5$ $b=3$



PTS: 1 NOT: Major axis is always parallel to the y-axis.

7. ANS:

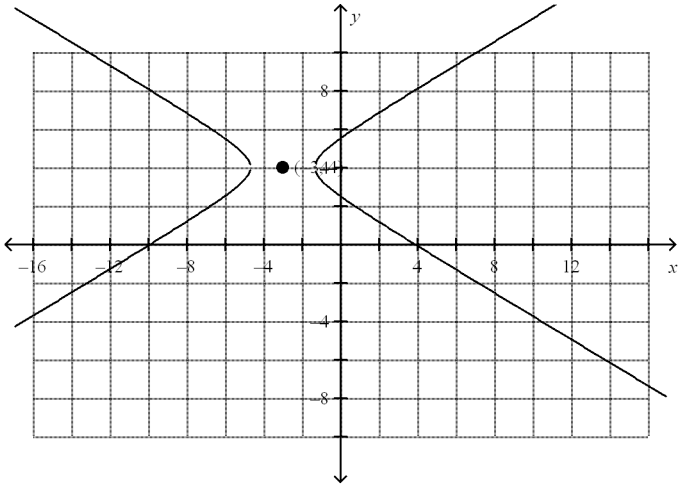
Ellipse: $\frac{(x+6)^2}{9^2}+\frac{(y-2)^2}{4^2}=1$ Center: $(-6,2)$ $a=9$ $b=4$



PTS: 1 NOT: Major axis is always parallel to the x-axis.

8. ANS:

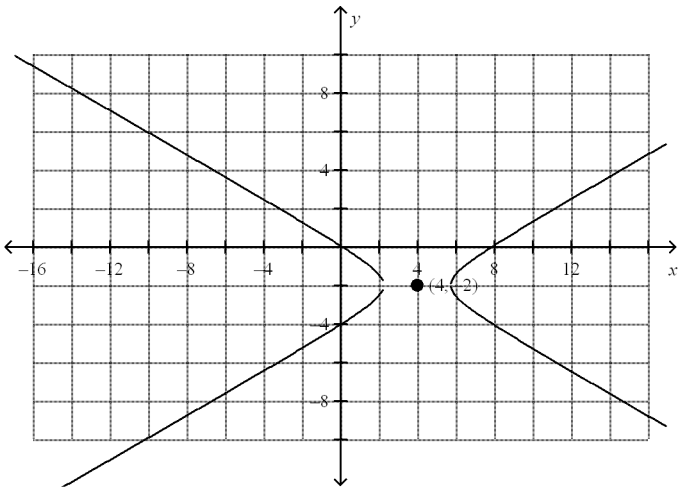
Hyperbola opening left-right: $\frac{(x+3)^2}{10^2}-\frac{(y-4)^2}{6^2}=1$ Center: $(-3,4)$ $a=10$ $b=6$



PTS: 1

9. ANS:

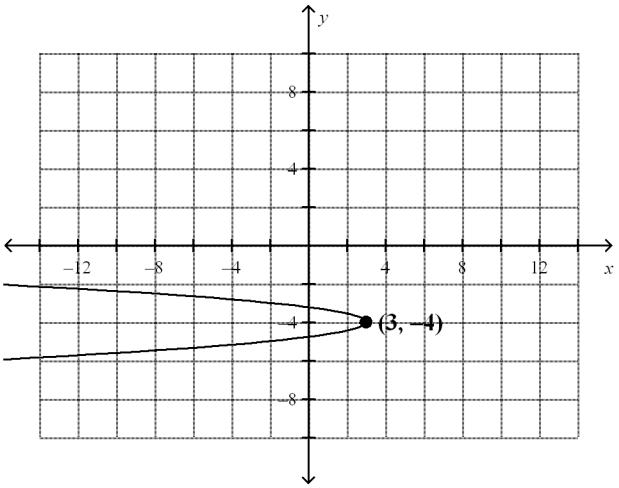
Hyperbola opening up-down: $\frac{(y+2)^2}{4^2} - \frac{(x-4)^2}{7^2} = 1$ Center: $(4,-2)$ $a = 7$ $b = 4$



PTS: 1

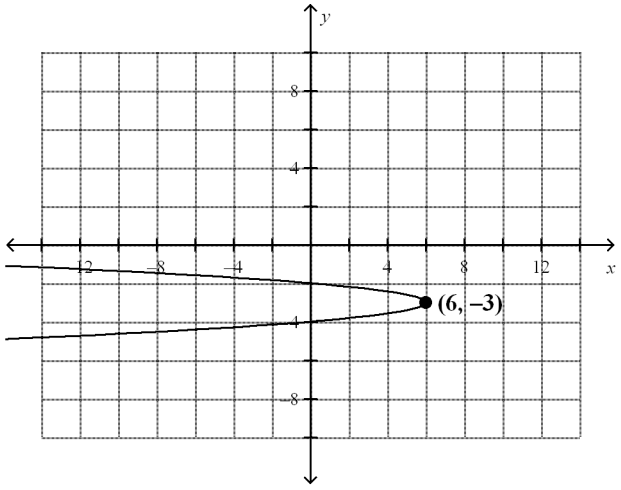
10. ANS:

Parabola opening left: Vertex: $(3,-4)$ y-intercept 1: (0, –4.77) y-intercept 2: (0, –3.23)



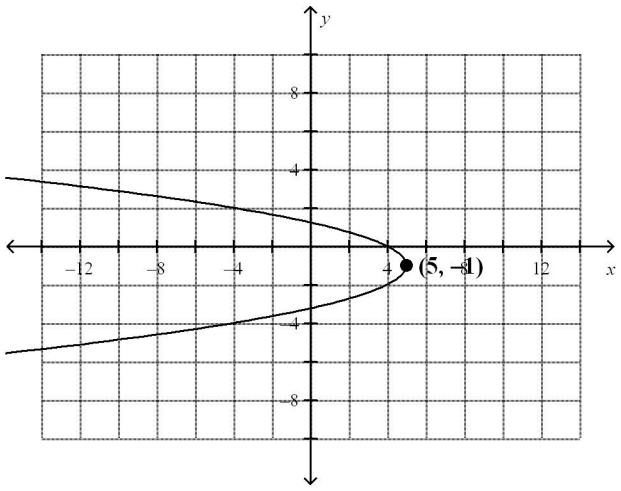
PTS: 1 NOT: 2 y-intercepts: rational or irrational

11. ANS:
Parabola opening left: Vertex: (6,– 3) y-intercept 1: (0, –4) y-intercept 2: (0, –2)



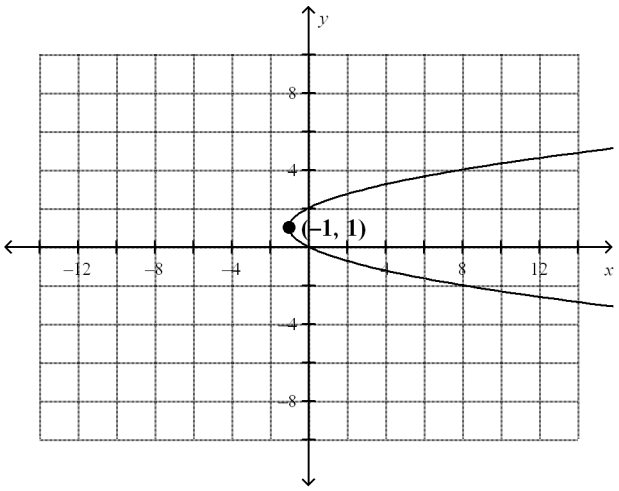
PTS: 1 NOT: 2 y-intercepts: both rational

12. ANS:
Parabola opening left: Vertex: (5,– 1) y-intercept 1: (0, –3.24) y-intercept 2: (0, 1.24)



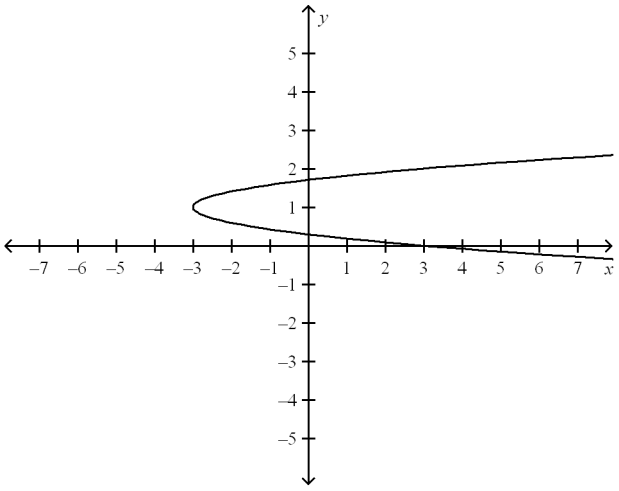
PTS: 1 NOT: 2 y-intercepts: both irrational

13. ANS:
Parabola opening right: Vertex: $(-1, 1)$



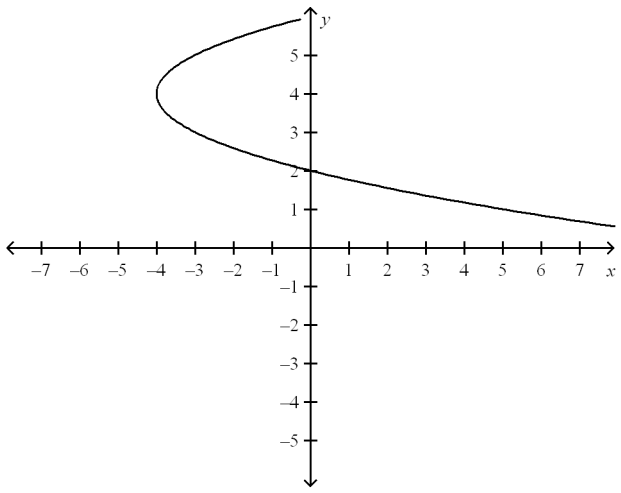
PTS: 1

14. ANS:
Parabola opening right: Vertex: $(-3, 1)$ y-intercept 1: (0, 1.71) y-intercept 2: (0, 0.29)



PTS: 1 NOT: 2 y-intercepts: rational or irrational

15. ANS:
Parabola opening right: Vertex: (–4,4) y-intercept 1: (0, 6) y-intercept 2: (0, 2)



PTS: 1 NOT: 2 y-intercepts: both rational