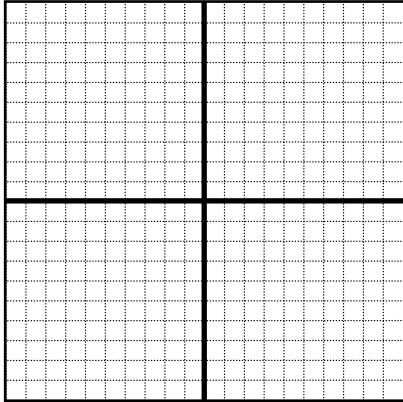


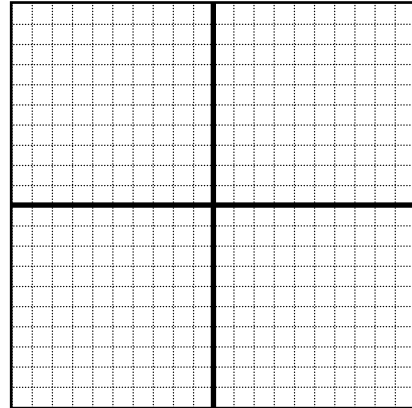
Graph each of the following making sure to include all important parts where appropriate (center, vertices, co-vertices, foci, directrix, and asymptotes). Also, fill in the blanks provided.

5. $\frac{(x-3)^2}{25} + \frac{(y-4)^2}{9} = 1$



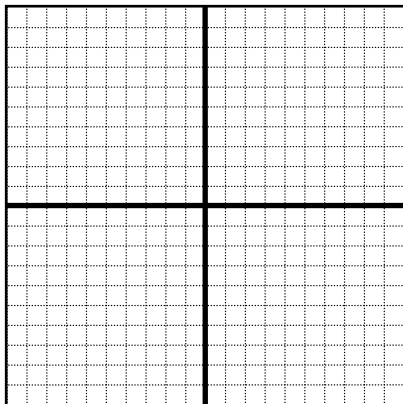
Foci:

6. $\frac{(y+3)^2}{4} - \frac{x^2}{16} = 1$



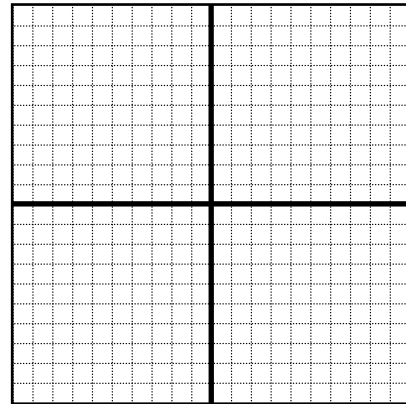
Foci:

7. $(x+5)^2 + (y-2)^2 = 7$



Center:

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



Focus:

Directrix:

Put each of the following equations in standard form and classify the conic.

9. $9y^2 - x^2 + 2x + 54y + 62 = 0$

9. _____

10. $4x^2 + y^2 - 8x + 4y - 16 = 0$

10. _____

Put each of the following equations in standard form and classify the conic.

11. $x^2 + y^2 + 6x - 4y + 12 = 0$

11. _____

12. $x^2 - 2y + 16x + 28 = 0$

12. _____

Answers

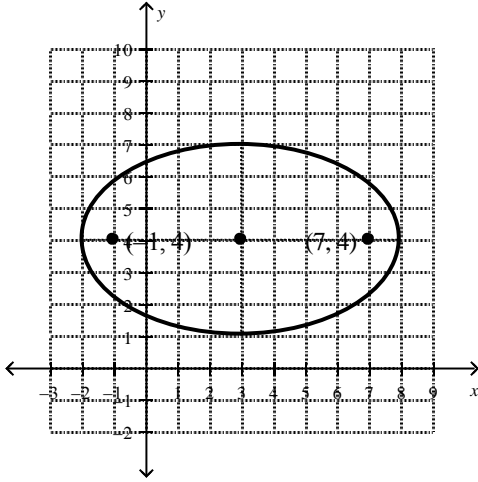
1. $(x-4)^2 + (y+1)^2 = 13$

2. $\frac{y^2}{16} - \frac{(x-6)^2}{20} = 1$

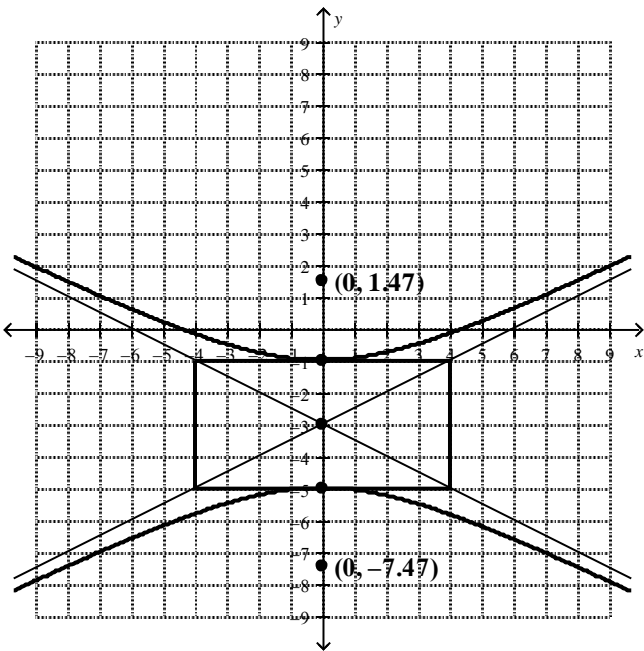
3. $\frac{(x+3)^2}{4} + (y-1)^2 = 1$

4. $(y+2)^2 = 20(x+1)$

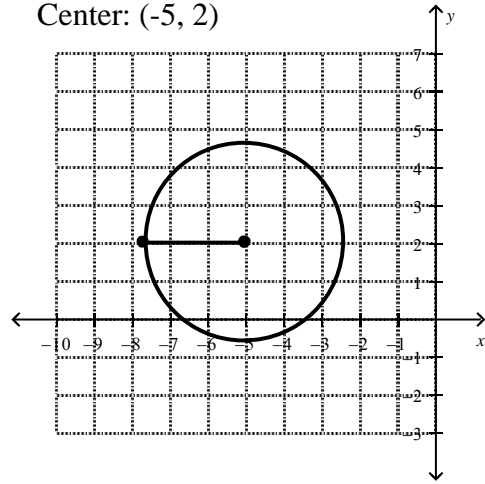
5. Foci: $(7,4), (-1,4)$



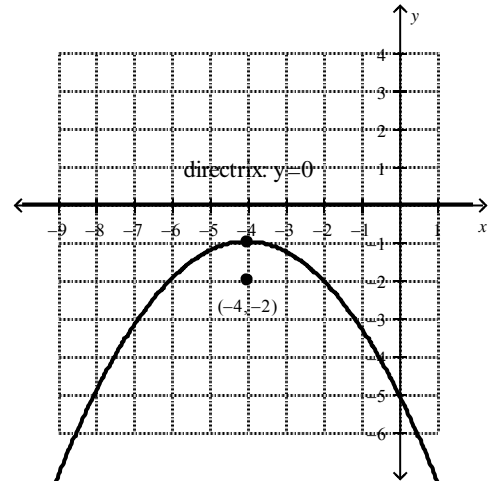
6. foci: $(0, -3 \pm \sqrt{20})$ or $(0, 1.5), (0, -7.4)$



7. Center: $(-5, 2)$



8.



Focus: $(-4, -2)$

Directrix: $y = 0$

9. $\frac{(y+3)^2}{2} - \frac{(x-1)^2}{18} = 1$

Hyperbola

10. $\frac{(x-1)^2}{6} + \frac{(y+2)^2}{24} = 1$

Ellipse

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

Circle

12. $(x+8)^2 = 2(y+18)$

Parabola