

Algebra II

Week 6: Homework #2

1-8. Find the distance between the given points. Then, find the midpoint of the line segment connecting them.

1-2. (3, 4) and (-2, 2)

3-4. (-5, -1) and (5, 0)

5-6. (6, 2) and (-3, 8)

7-8. (-5, -2) and (9, -4)

9-12. Write the equation of the perpendicular bisector of the line segment joining the two points.

9. (2, 5) and (4, 7)

10. (-1, -5) and (1, -7)

11. (5, -4) and (-1, 2)

12. (-3, 4) and (9, 6)

13-20. Classify the conic section as a circle, ellipse, parabola, or hyperbola.

13. $x^2 - 25y^2 + 8x - 9 = 0$

14. $x^2 - 6x + 3y - 42 = 0$

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$$15. x^2 + y^2 - 132 = 0$$

$$16. 3x^2 + 2y^2 - 24x - 4y + 44 = 0$$

$$17. 8x^2 + 6y^2 + 36y + 53 = 1$$

$$18. x^2 - 25y^2 + 8x - 9 = 0$$

$$19. x^2 - y - 6x = 0$$

$$20. x^2 + y^2 - 4x - 28y + 56 = 0$$

21-24. Decide whether the equation represents a circle or ellipse. If it is a circle, identify the center and radius. If it is an ellipse, identify the center, the major and minor radii, and the foci.

$$21. x^2 + y^2 + 10x - 14y - 7 = 0$$

$$22. 25x^2 + 9y^2 + 18y - 216 = 0$$

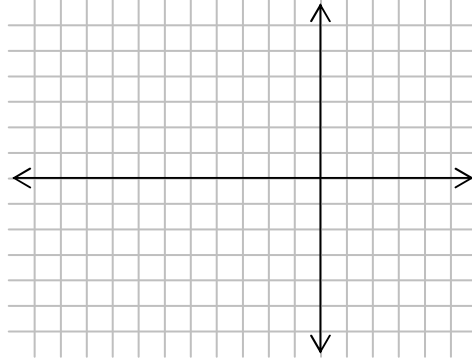
$$23. x^2 + 64y^2 - 8x - 48 = 0$$

$$24. x^2 + y^2 - 12y - 12 = 0$$

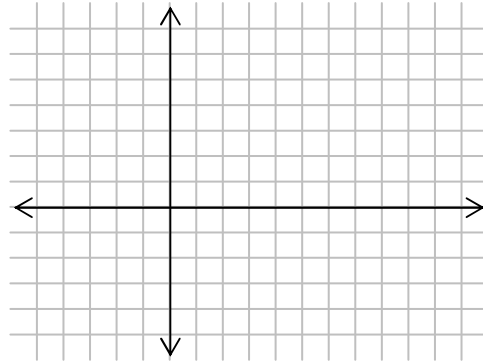
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25-28. Write the equation of the conic section in standard form, and then graph the equation.

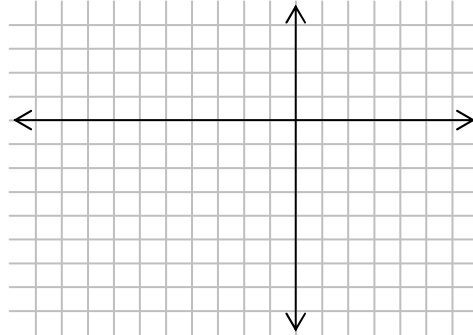
25. Circle with center $(-3, 0)$ and radius 4



26. Ellipse with vertices at $(2, 6)$ and $(2, -4)$ and co-vertices at $(0, 1)$ and $(4, 1)$



27. Circle with points $(1, -2)$, $(-2, 1)$, $(-5, -2)$ and $(-2, -5)$



28. Ellipse with center $(0, 8)$, major (horizontal) radius of 7, and minor (vertical) radius of 2

