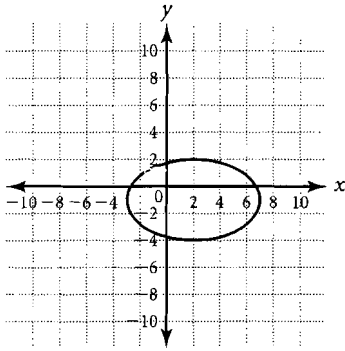


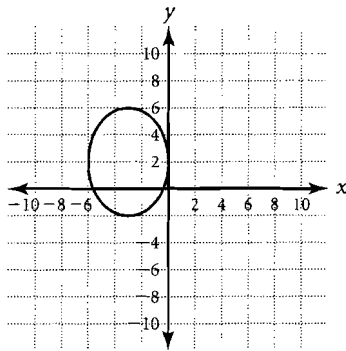
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Write the standard equation for each ellipse.

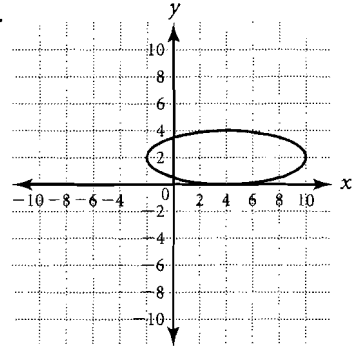
1.



2.

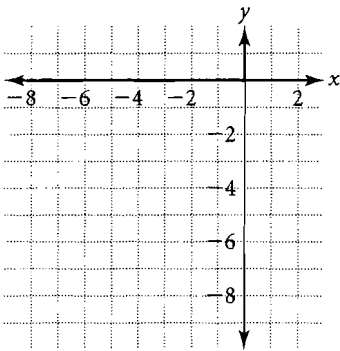


3.

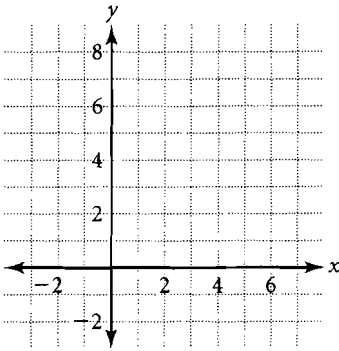


Sketch the graph of each ellipse. Label the center, foci, vertices, and co-vertices.

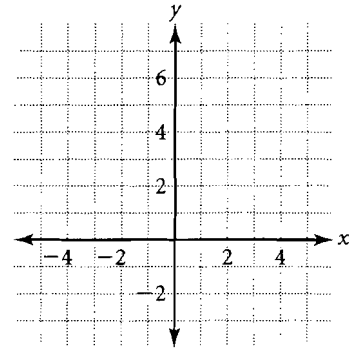
4. $\frac{(x + 3)^2}{16} + \frac{(y + 4)^2}{10} = 1$



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



6. $\frac{x^2}{12} + \frac{(y - 2)^2}{4} = 1$



Write the standard equation for each ellipse.

7. $x^2 + 3y^2 + 4x - 6y = 5$ _____

8. $x^2 + 4y^2 + 4x - 24y = 60$ _____

9. $9x^2 + 4y^2 - 18x + 8y = 23$ _____

10. $4x^2 + 16y^2 - 8x + 64y = 28$ _____

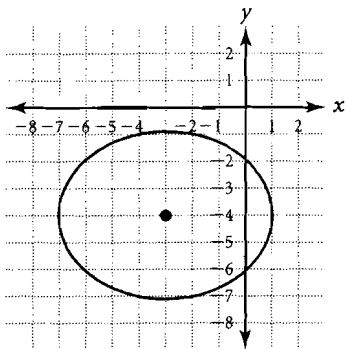
Answers

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

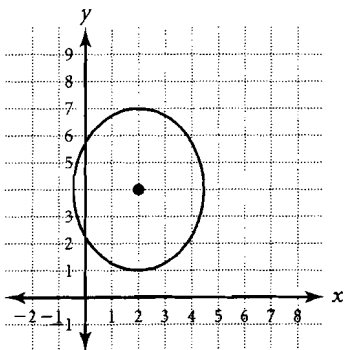
$$2. \frac{(x+3)^2}{9} + \frac{(y-2)^2}{16} = 1$$

$$3. \frac{(x-4)^2}{36} + \frac{(y-2)^2}{4} = 1$$

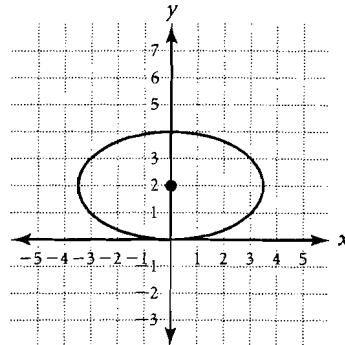
4. Center: $(-3, -4)$; Vertices: $(1, -4)$ and $(-7, -4)$; Co-Vertices: $(-3, -4 \pm \sqrt{10})$; Foci: $(-3 \pm \sqrt{6}, -4)$



5. Center: $(2, 4)$; Vertices: $(2, 7)$ and $(2, 1)$; Co-Vertices: $(2 \pm \sqrt{6}, 4)$; Foci: $(2, 4 \pm \sqrt{3})$



6. Center: $(0, 2)$; Vertices: $(\pm 2\sqrt{3}, 2)$; Co-Vertices: $(0, 4)$ and $(0, 0)$; Foci: $(\pm 2\sqrt{2}, 2)$



$$7. \frac{(x+2)^2}{12} + \frac{(y-1)^2}{4} = 1$$

$$8. \frac{(x+2)^2}{100} + \frac{(y-3)^2}{25} = 1$$

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

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