

Calculate the product of the matrices.

$$1. \text{ AB, if } A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \\ -1 & -6 \end{bmatrix}, B = \begin{bmatrix} 0 & -3 & 3 \\ 4 & 0 & 2 \\ 8 & -2 & 7 \end{bmatrix}$$

$$2. \text{ BA, using matrices from \# 1}$$

$$3. \text{ AB, if } A = \begin{bmatrix} 1 & 2 \\ 5 & 2 \end{bmatrix}, B = \begin{bmatrix} 2 & -1 \\ -1 & 8 \end{bmatrix}$$

$$4. \text{ BA, using matrices from \# 3}$$

By what matrix would you multiply both sides to solve the system?

$$5. \begin{cases} 5x + 4y = 2 \\ -x + y = -22 \end{cases}$$

$$6. \begin{cases} 2x - 5y = 2 \\ 3x - 7y = 1 \end{cases}$$

$$7. \begin{cases} 2x + y = 0.3 \\ 3x - y = -1.3 \end{cases}$$

$$8. \begin{cases} 0.2x - 0.1y = 0.07 \\ 0.4x - 0.5y = -0.01 \end{cases}$$

Find the dimensions.

$$9. \text{ If } M_{2 \times 3} \text{ is multiplied by } N_{3 \times 4}, \text{ what are the dimensions of } MxN?$$

$$10. \text{ } MxN \text{ is a } 5 \times 2 \text{ matrix, and } M \text{ is a } 5 \times 7. \text{ What are the dimensions of } N?$$

$$11. \text{ What are the dimensions of } M \text{ if } N \text{ is a } 3 \times 2 \text{ and } MxN \text{ is } 5 \times 2?$$

$$12. \text{ If } M_{4 \times 1} \text{ is multiplied by } N_{1 \times 3}, \text{ what are the dimensions of } MxN?$$

Solve.

$$13. \begin{cases} x - 2y = 5 \\ 2x - 3y = 10 \end{cases}$$

$$14. \begin{cases} -x + 4y - 2z = 22 \\ 2x + 5y - 3z = 28 \\ 6x - y - z = -4 \end{cases}$$

In exercises 15 – 16, solve for  $X$ .

$$A = \begin{bmatrix} -2 & -1 \\ 1 & 0 \\ 3 & -4 \end{bmatrix}$$

$$B = \begin{bmatrix} 0 & 3 \\ 2 & 0 \\ -4 & -1 \end{bmatrix}$$

$$15. 2X + 3A = B$$

$$16. 2A + 4B = -2X$$

Calculate the length of the minor axis.

$$17. 16x^2 + 9y^2 - 32x + 72y + 16 = 0$$

$$18. 4x^2 + 25y^2 + 16x - 150y + 141 = 0$$

19.  $9x^2 - 16y^2 - 18x - 32y - 151 = 0$

20.  $-4x^2 + 25y^2 - 8x + 150y + 121 = 0$

What shape is the graph of the equation?

21.  $x^2 + 4y^2 - 6x + 20y - 2 = 0$

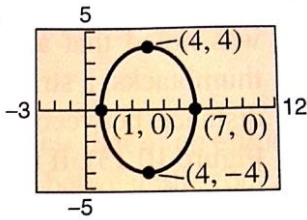
22.  $-x^2 + 9y^2 + 10x + 54y + 55 = 0$

23.  $\frac{(x-3)^2}{16} - \frac{(y+5)^2}{4} = 1$

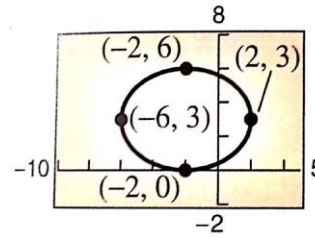
24.  $\frac{(x-5)^2}{1} + \frac{(y+3)^2}{36} = 1$

Write the equation shown by the graph, in standard and general form.

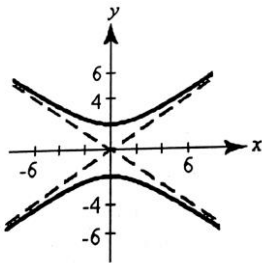
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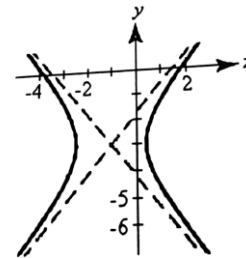
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27.

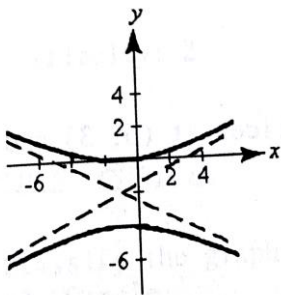


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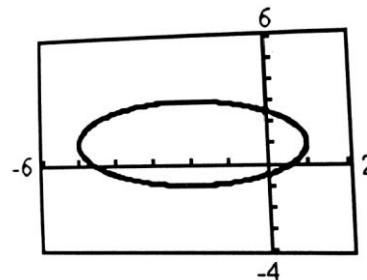


Find the foci of the equation.

29.



30.



31.  $\frac{(x-4)^2}{12} + \frac{(y+3)^2}{16} = 1$

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

33.  $4x^2 - 4y^2 - 4x + 8y - 11 = 0$

34.  $3x^2 + 2y^2 - 12x + 12y + 29 = 0$

## Answers to SLO Review Units 5 and 6

1. Not possible

$$2. \begin{bmatrix} 12 & -30 \\ 6 & -8 \\ 19 & -42 \end{bmatrix}$$

$$3. \begin{bmatrix} 0 & 15 \\ 8 & 11 \end{bmatrix}$$

$$4. \begin{bmatrix} -3 & 2 \\ 39 & 14 \end{bmatrix}$$

$$5. \begin{bmatrix} \frac{1}{9} & -\frac{4}{9} \\ \frac{1}{9} & \frac{5}{9} \end{bmatrix}$$

$$6. \begin{bmatrix} -7 & 5 \\ -3 & 2 \end{bmatrix}$$

$$7. \begin{bmatrix} \frac{1}{5} & \frac{1}{5} \\ \frac{3}{5} & -\frac{2}{5} \end{bmatrix}$$

$$8. \begin{bmatrix} \frac{25}{3} & -\frac{5}{3} \\ \frac{20}{3} & -\frac{10}{3} \end{bmatrix}$$

9.  $2x^4$

10.  $7x^2$

11.  $5x^3$

12.  $4x^3$

13.  $(5, 0)$

14.  $(0, 5, -1)$

$$15. \begin{bmatrix} 3 & 3 \\ -0.5 & 0 \\ -6.5 & 5.5 \end{bmatrix}$$

$$16. \begin{bmatrix} 2 & -5 \\ -5 & 0 \\ 5 & 6 \end{bmatrix}$$

17.6

18.4

19.6

20.  $2\sqrt{13}$

21. Horizontal ellipse

22. Vertical hyperbola

23. Horizontal hyperbola

24. Vertical ellipse

$$25. \frac{(x-4)^2}{9} + \frac{(y)^2}{16} = 1$$

$$16x^2 + 9y^2 - 128x + 112 = 0$$

$$26. \frac{(x+2)^2}{16} + \frac{(y-3)^2}{9} = 1$$
$$9x^2 + 16y^2 + 36x - 96y + 36 = 0$$

$$27. \frac{(x)^2}{9} - \frac{(y)^2}{4} = 1$$
$$4x^2 - 9y^2 - 36 = 0$$

$$28. \frac{(x+1)^2}{2} - \frac{(y+3)^2}{3} = 1$$
$$3x^2 - 2y^2 + 6x + 12y + 15 = 0$$

$$29. (-1, -2 \pm 2\sqrt{5})$$

$$30. (-2 \pm \sqrt{5}, 1)$$

$$31. (4, -1), (4, -7)$$

$$32. (0, 1 \pm \sqrt{5})$$

$$33. \left(\frac{1}{2} \pm 2\sqrt{2}, 1\right)$$

$$34. \left(2, -3 \pm \frac{\sqrt{5}}{6}\right)$$