

Section 1.02 - Graphs of Equations

1. Determine which of the following points lies on the graph of the equation.

$$y = \sqrt{x + 62}$$

- a. (2, 10)
- b. (2, 9)
- c. (2, 8)
- d. (9, 8)
- e. (3, 8)

ANSWER:

c

2. Determine which of the following points lies on the graph of the equation.

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

- a. (5, 7)
- b. (5, 9)
- c. (5, 8)
- d. (8, 7)
- e. (6, 7)

ANSWER:

a

3. Write the standard form of the equation of the circle with the given characteristics.

Endpoints of a diameter: (2, 2), (12, 2)

- a. $(x - 7)^2 + (y - 2)^2 = 5$
- b. $(x - 2)^2 + (y - 7)^2 = 25$
- c. $(x + 2)^2 + (y + 7)^2 = 25$
- d. $(x + 7)^2 + (y + 2)^2 = 25$
- e. $(x - 7)^2 + (y - 2)^2 = 25$

ANSWER:

e

4. Write the standard form of the equation of the circle with the given characteristics.

Center: (3, 1); Radius: 7

- a. $(x - 3)^2 + (y - 1)^2 = 49$
- b. $(x - 3)^2 + (y - 1)^2 = 7$
- c. $(x - 3)^2 + (y - 1)^2 + 7 = 0$
- d. $x^2 + y^2 = 0$
- e. $(x - 3)^2 + (y - 1)^2 - 49 = 0$

ANSWER:

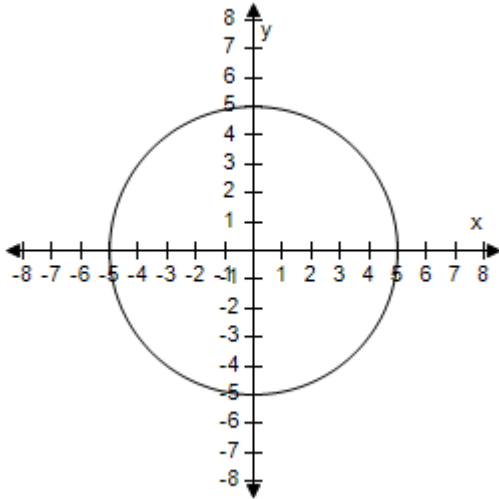
a

5. Find the center and radius of the circle, and sketch its graph.

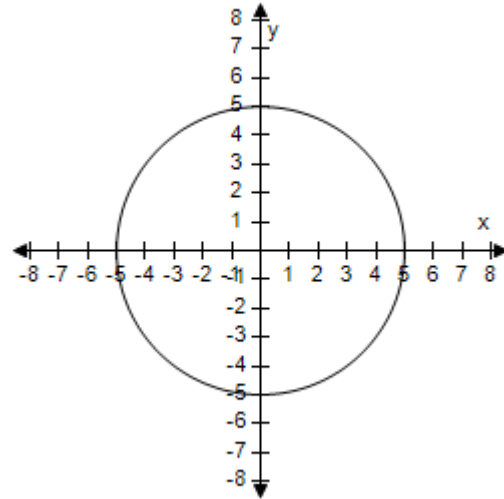
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$$x^2 + y^2 = 16$$

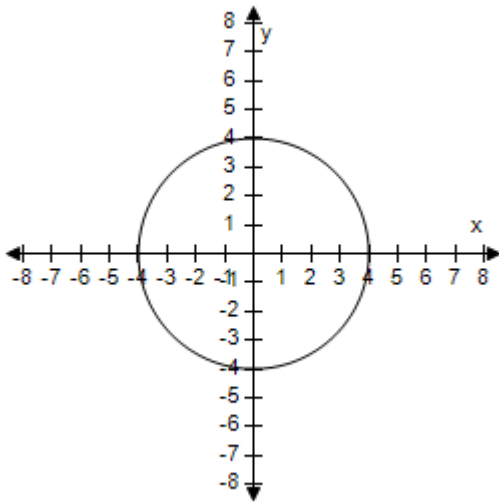
a. Center (0, 0), Radius 16



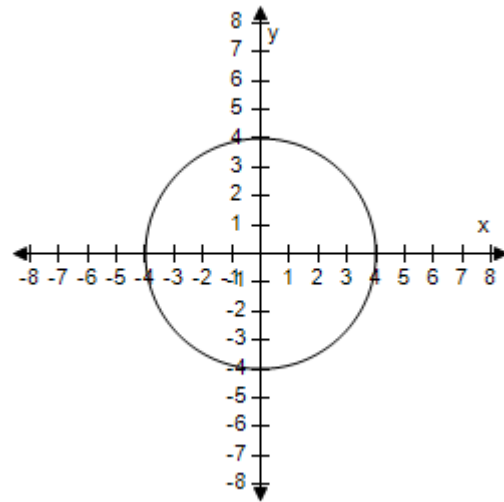
b. Center (0, 0), Radius 4



c. Center (0, 0), Radius 4

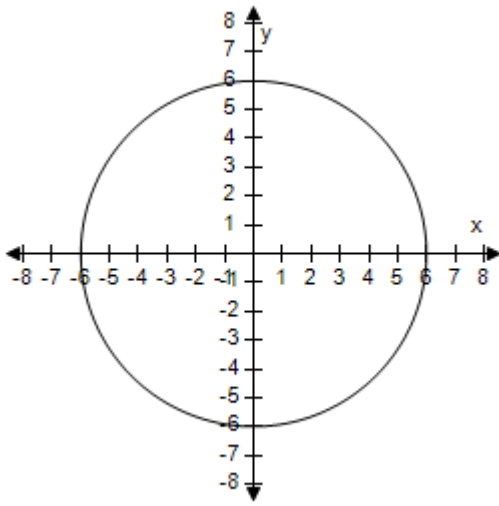


d. Center (0, 0), Radius 16



e. Center (0, 0), Radius 4

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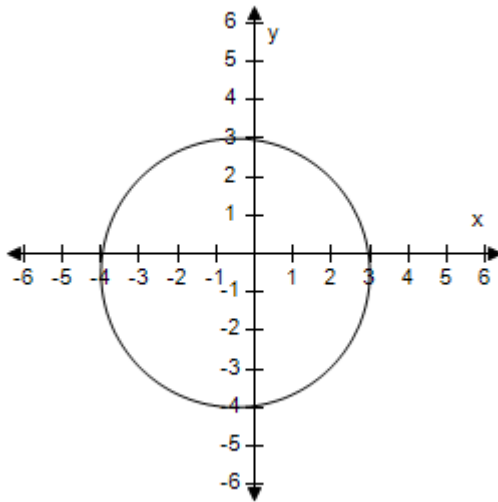
ANSWER:

c

6. Find the center and radius of the circle, and sketch its graph.

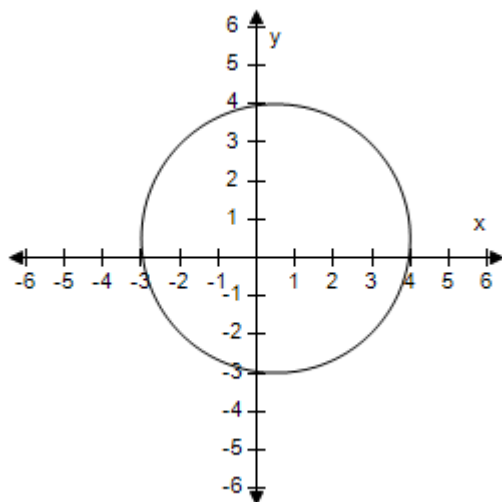
$$\left(x - \frac{1}{2}\right)^2 + \left(y - \frac{1}{2}\right)^2 = \frac{49}{4}$$

a. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{49}{4}$

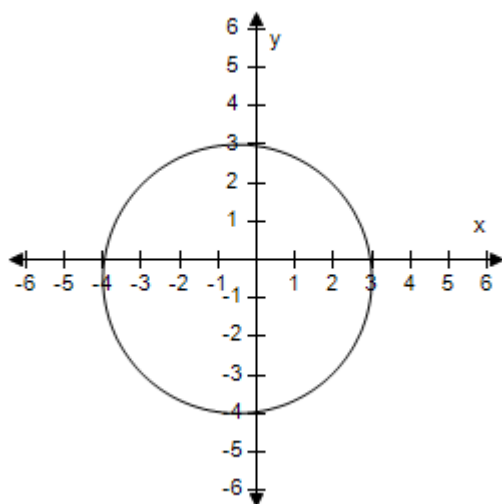


b. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{49}{4}$

Section 1.02 - Graphs of Equations

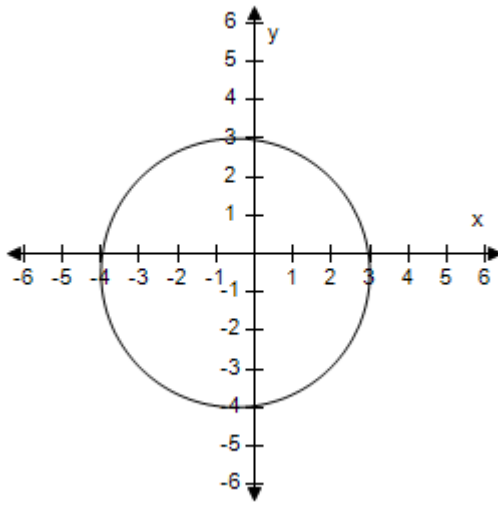


c. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{7}{2}$

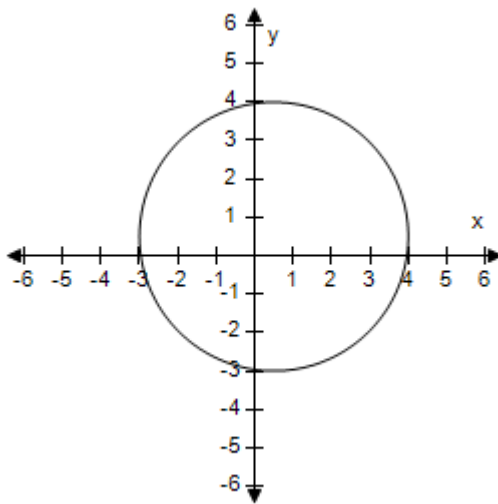


d. Center $\left(-\frac{1}{2}, -\frac{1}{2}\right)$, Radius $\frac{7}{4}$

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e. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{7}{2}$



ANSWER:

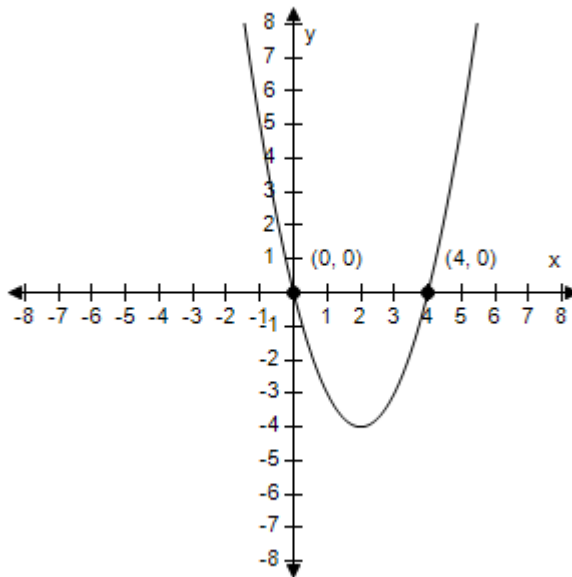
e

7. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

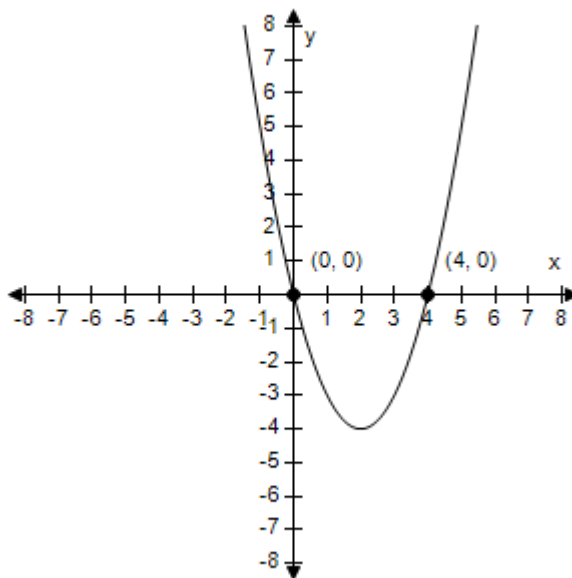
$$y = x^2 - 4x$$

- a. x -intercepts : (0, 0), (4, 0)
 y -intercept : (0, 0)
 No symmetry

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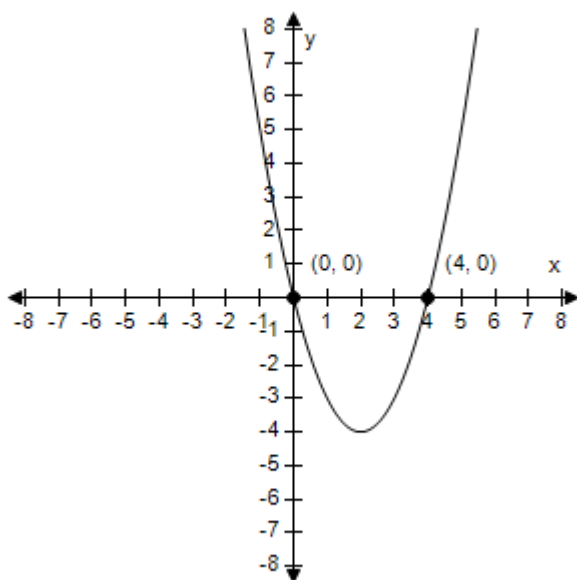


- b. x -intercepts : (0, 0), (-4, 0)
 y -intercept : (0, 1)
 No symmetry

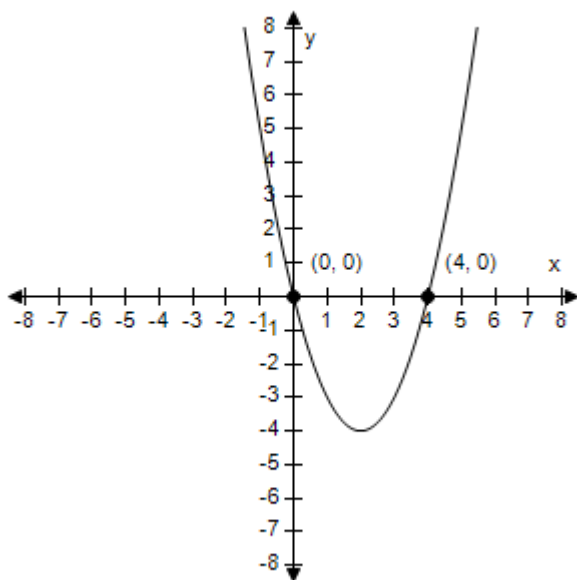


- c. x -intercepts : (4, 0), (4, 0)
 y -intercept : (0, 1)
 No symmetry

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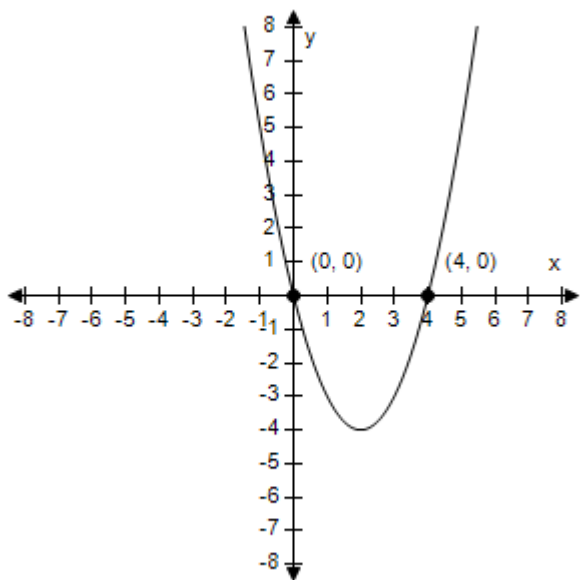


- d. x -intercepts : (0, 0), (4, 0)
 y -intercept : (0, 1)
 No symmetry



- e. x -intercepts : (0, 0), (4, 0)
 y -intercept : (0, -1)
 No symmetry

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ANSWER:

a

8. Write the standard form of the equation of the circle with the given characteristics.
Center: (6, 1); Solution point: (5, 9)

- a. $(x + 6)^2 + (y + 1)^2 = 65$
- b. $(x - 6)^2 + (y + 1)^2 - 65 = 0$
- c. $(x + 6)^2 + (y + 1)^2 + 65 = 0$
- d. $(x - 6)^2 + (y - 1)^2 = 65$
- e. $(x - 1)^2 + (y - 6)^2 = 65$

ANSWER:

d

9. Complete the table. Use the resulting solution points to sketch the graph of the equation.
 $y = -2x + 3$

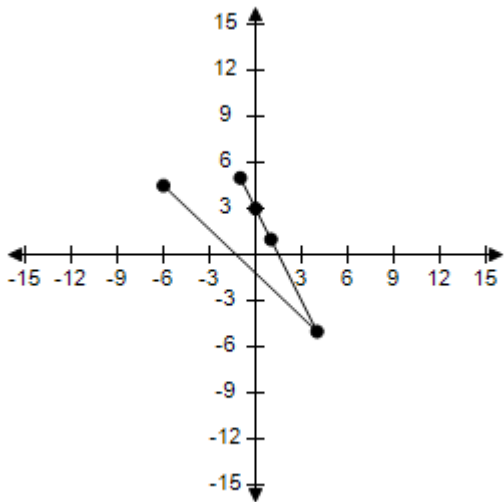
x	-1	0	1	4	$\frac{9}{2}$
y					
(x, y)					

a.

x	-1	0	1	4	$\frac{9}{2}$
y	5	3	1	-5	-6

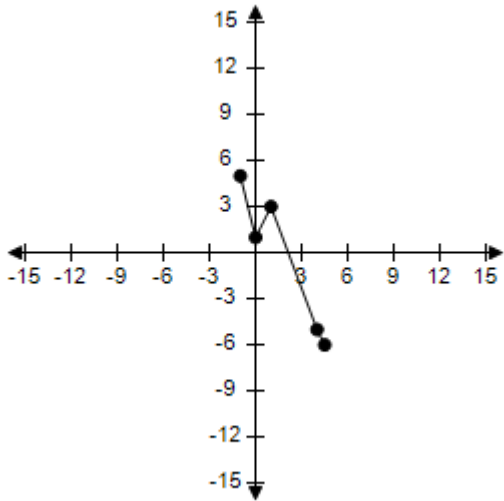
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(x, y)	$(-1, 5)$	$(0, 3)$	$(1, 1)$	$(4, -5)$	$(\frac{9}{2}, 9)$
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b.

x	-1	0	1	4	$\frac{9}{2}$
y	5	3	1	-5	-6
(x, y)	$(-1, 5)$	$(0, 1)$	$(1, 3)$	$(4, -5)$	$(\frac{9}{2}, -6)$

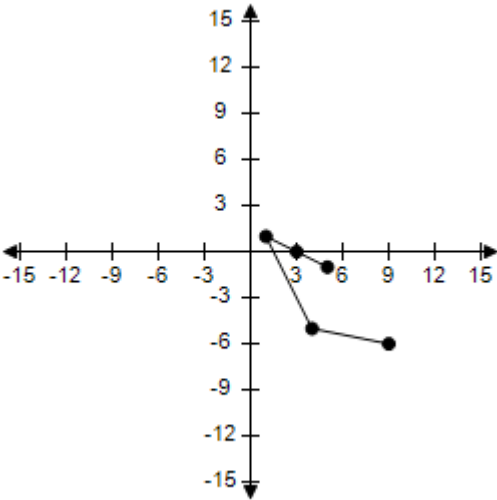


c.

x	-1	0	1	4	$\frac{9}{2}$
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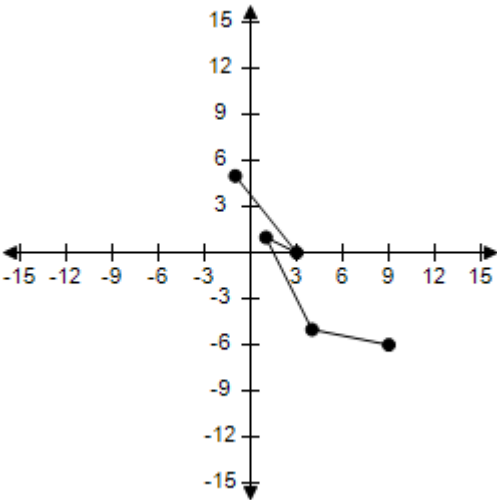
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y	5	3	1	-5	-6
(x, y)	(5, -1)	(3, 0)	(1, 1)	(4, -5)	($\frac{9}{2}$, -6)



d.

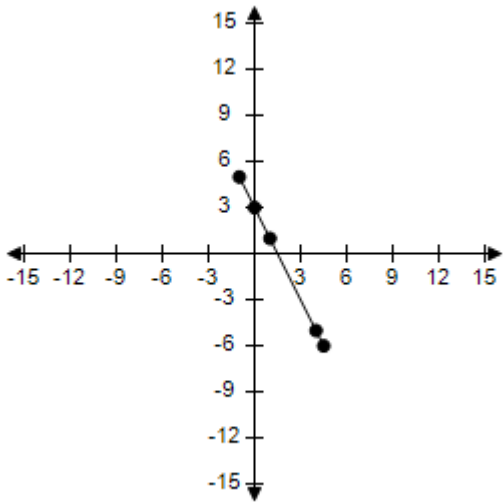
x	-1	0	1	4	$\frac{9}{2}$
y	5	3	1	-5	-6
(x, y)	(-1, 5)	(3, 0)	(1, 1)	(4, -5)	($\frac{9}{2}$, -6)



e.

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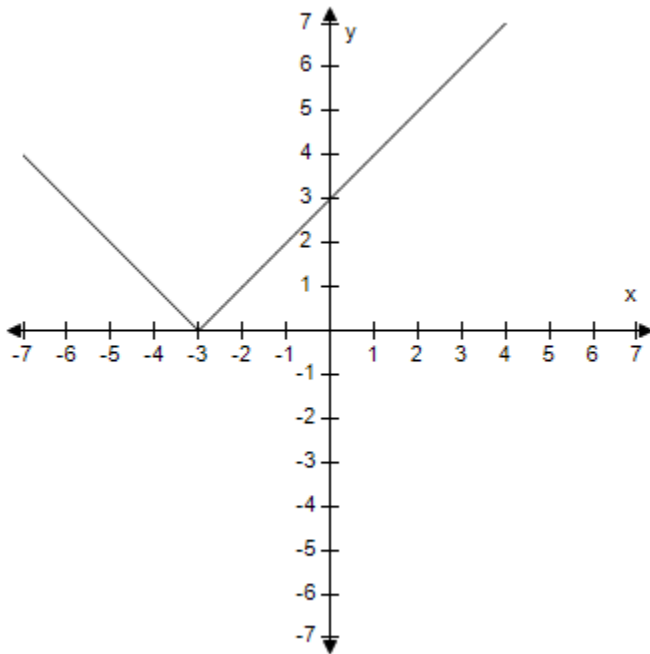
x	-1	0	1	4	$\frac{9}{2}$
y	5	3	1	-5	-6
(x, y)	$(-1, 5)$	$(0, 3)$	$(1, 1)$	$(4, -5)$	$(\frac{9}{2}, -6)$



ANSWER: e

10. Graphically estimate the x - and y -intercepts of the graph.
 $y = |x + 3|$

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- a. x -intercept: $(-3, 0)$
 y -intercept: $(0, 3)$
- b. x -intercept: $(0, -3)$
 y -intercept: $(3, 0)$
- c. x -intercept: $(0, -3)$
 y -intercept: $(0, 3)$
- d. x -intercept: $(3, 0)$
 y -intercept: $(3, 0)$
- e. x -intercept: $(0, 3)$
 y -intercept: $(3, 0)$

ANSWER:

a

11. Determine which of the following points lies on the graph of the equation.
 $x^2 + y^2 = 5$

- a. $(3, 1)$
- b. $(2, 3)$
- c. $(4, 1)$
- d. $(2, 1)$
- e. $(2, 2)$

ANSWER:

d

12. Which of the following graphs is symmetric about the y -axis?

- a. $y = x^7 - x^6 + 18$

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b. $y = x^7 - x^{12} + 18$

c. $y = x^9 - x^8 + 18$

d. $y = x^{12} - x^6 + 18$

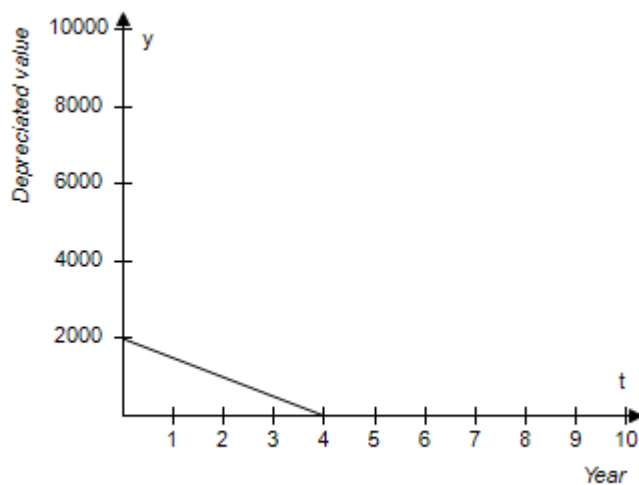
e. $y = x^9 + x^7 + 18$

ANSWER:

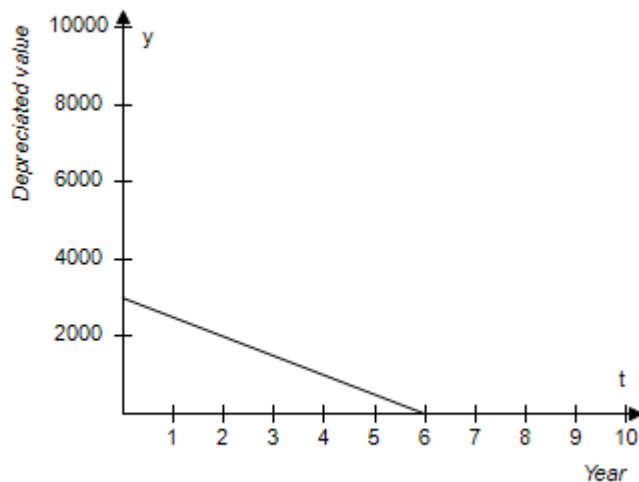
d

13. You purchase an all-terrain vehicle (ATV) for \$2,000. The depreciated value y after t years is given by $y = 2,000 - 500t$, $0 \leq t \leq 6$. Sketch the graph of the equation.

a.

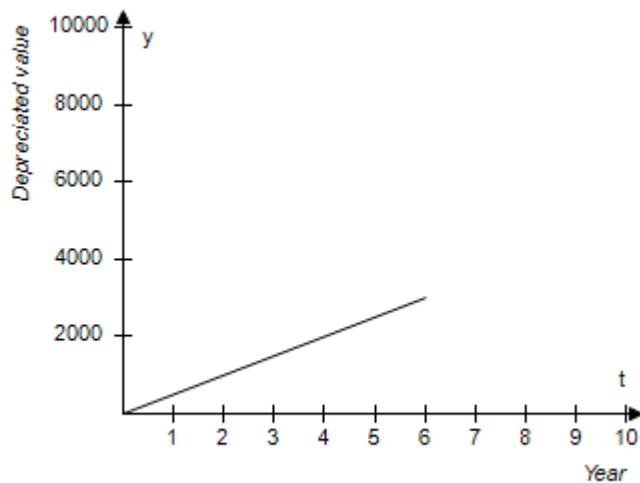


b.

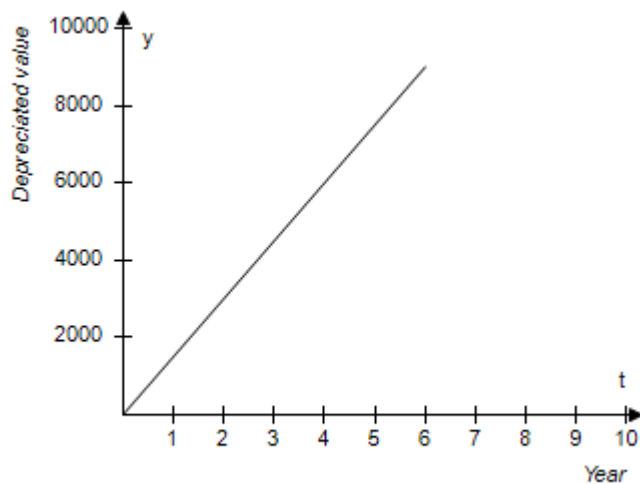


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c.

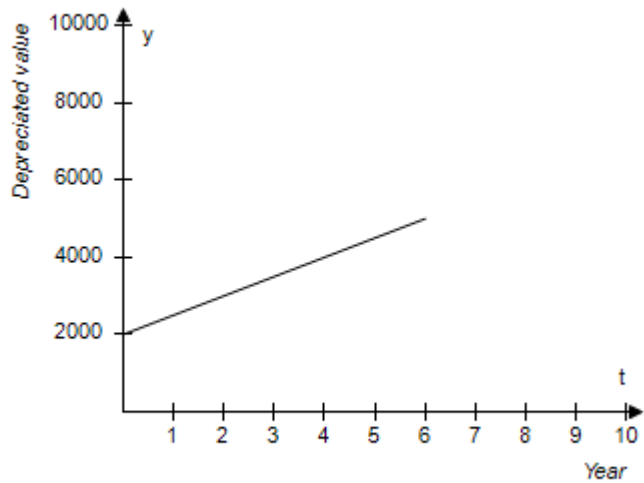


d.



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e.



ANSWER:

a

14. The resistance y (in ohms) of 1,000 feet of solid copper wire at 68 degrees Fahrenheit can be approximated by the model where x is the diameter of the wire in mils (0.001 inch).

$$y = \frac{10,770}{x^2} - 0.37, \quad 5 \leq x \leq 100$$

where x is the diameter of the wire in mils (0.001 inch).

Complete the table.

x	15	45	55	70	75
y					

Round the answer to two decimal places.

a.

x	15	45	55	70	75
y	47.50	1.54	3.19	1.83	4.95

b.

x	15	45	55	70	75
y	47.50	4.95	3.19	1.54	1.83

c.

x	15	45	55	70	75
y	47.50	4.95	1.83	3.19	1.54

d.

x	15	45	55	70	75
y	47.50	3.19	4.95	1.83	1.54

e.

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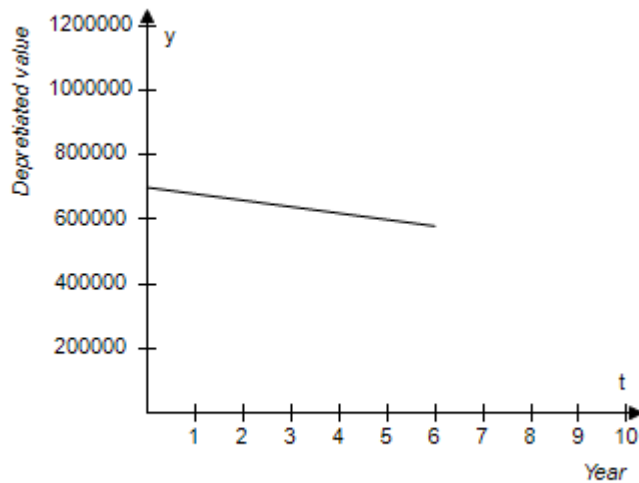
x	15	45	55	70	75	
y	47.50	4.95	3.19	1.83	1.54	

ANSWER:

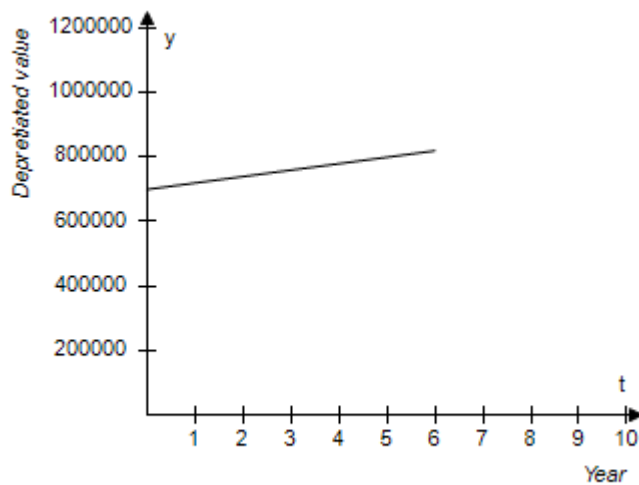
e

15. A hospital purchases a new magnetic resonance imaging (MRI) machine for \$600,000. The depreciated value y (reduced value) after t years is given by $y = 600,000 - 20,000t$, $0 \leq t \leq 6$. Sketch the graph of the equation.

a.

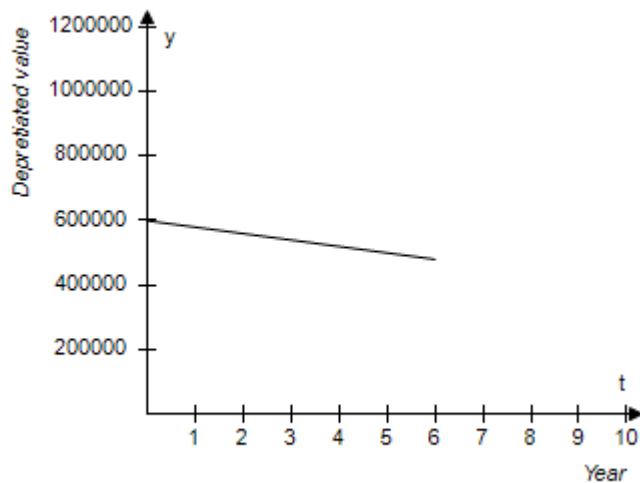


b.

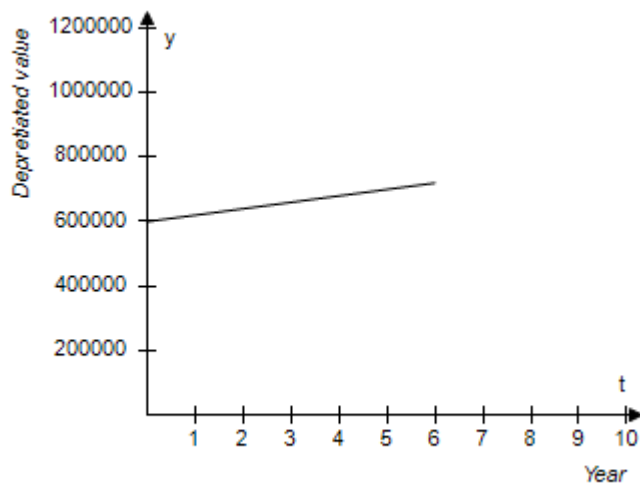


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c.

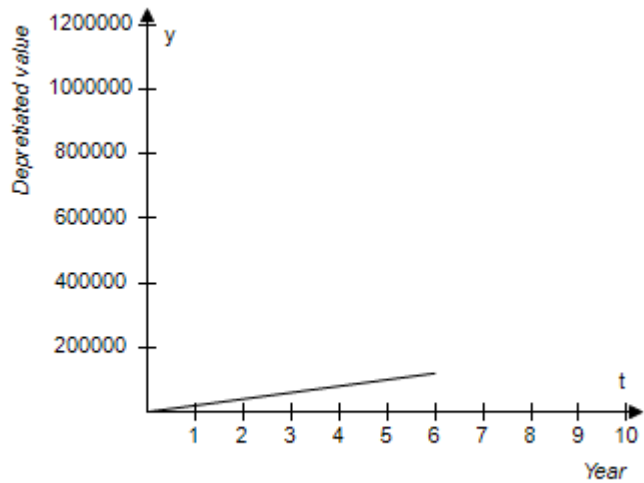


d.



Section 1.02 - Graphs of Equations

e.



ANSWER:

c

16. Determine which of the following point lies on the graph of the equation.

$y = \frac{1}{3}x^3 - x^2$

- a. (9, 162)
- b. (4, 3)
- c. (10, 3)
- d. (9, 4)
- e. (9, 5)

ANSWER:

a

17. Complete the table.

$y = \frac{3}{4}x - 1$

x	-12	-8	4	12	16
y					
(x, y)					

a.

x	-12	-8	4	12	16
y	-10	-7	2	8	11
(x, y)	(-10, -12)	(-7, -8)	(4, 2)	(12, 8)	(16, 11)

b.

x	-12	-8	4	12	16
y	-10	-7	2	8	11
(x, y)	(-12, -10)	(-8, -7)	(2, 4)	(12, 8)	(11, 16)

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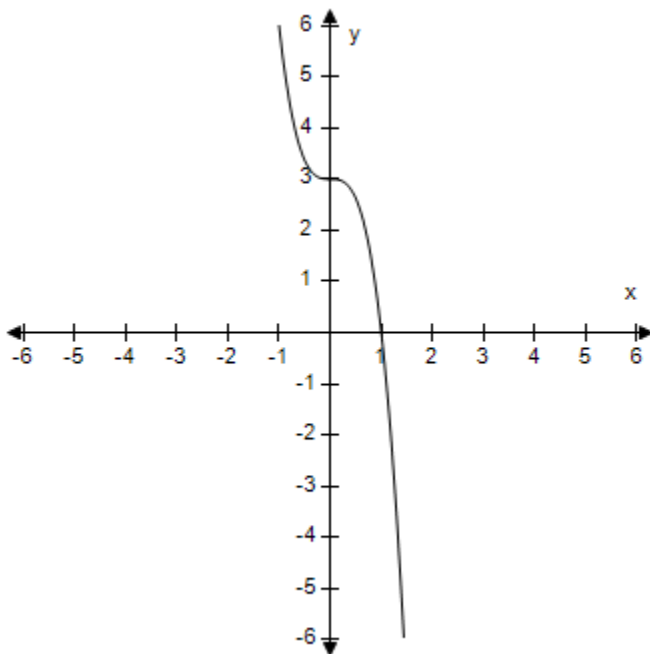
c.						
	x	-12	-8	4	12	16
	y	-10	-7	2	8	11
	(x, y)	$(-12, -10)$	$(-7, -8)$	$(2, 4)$	$(12, 8)$	$(16, 11)$
d.						
	x	-12	-8	4	12	16
	y	-10	-7	2	8	11
	(x, y)	$(-12, -10)$	$(-8, -7)$	$(4, 2)$	$(12, 8)$	$(16, 11)$
e.						
	x	-12	-8	4	12	16
	y	-10	-7	2	8	11
	(x, y)	$(-12, -10)$	$(-8, 2)$	$(4, -7)$	$(12, 8)$	$(16, 11)$

ANSWER:

d

18. Graphically estimate the x - and y -intercepts of the graph.

$$y = 3 - 3x^2$$



- x -intercept: $(0, 1)$
 y -intercept: $(0, 3)$
- x -intercept: $(1, 0)$

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- c. y -intercept: (3, 0)
 x -intercept: (0, 1)
 y -intercept: (3, 0)
- d. x -intercept: (1, 0)
 y -intercept: (0, 3)
- e. x -intercept: (1, 0)
 y -intercept: (0, -3)

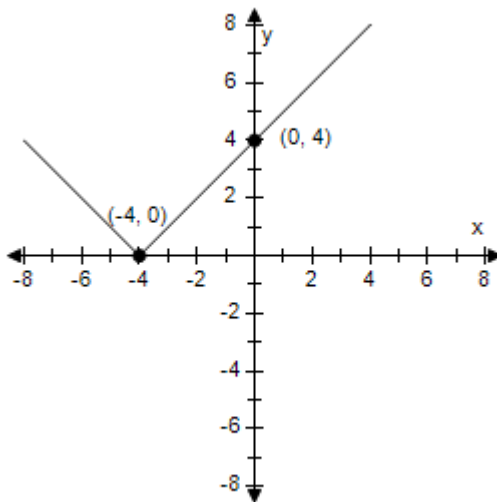
ANSWER:

d

19. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

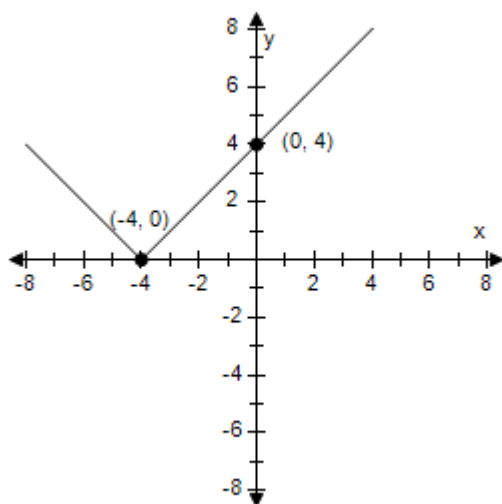
$$y = |x - 4|$$

- a. x - intercept: (4, 0)
 y - intercept: (0, 4)
 No symmetry

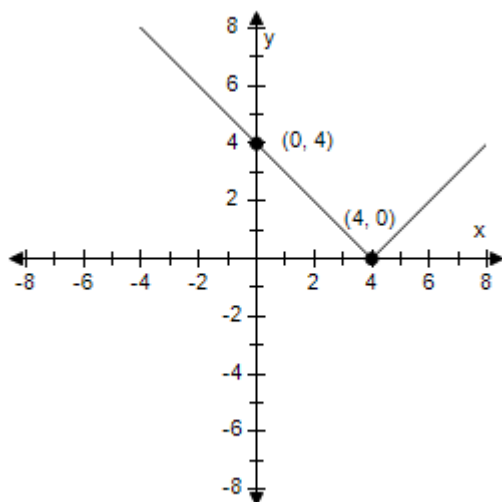


- b. x - intercept: (-4, 0)
 y - intercept: (0, 4)
 No symmetry

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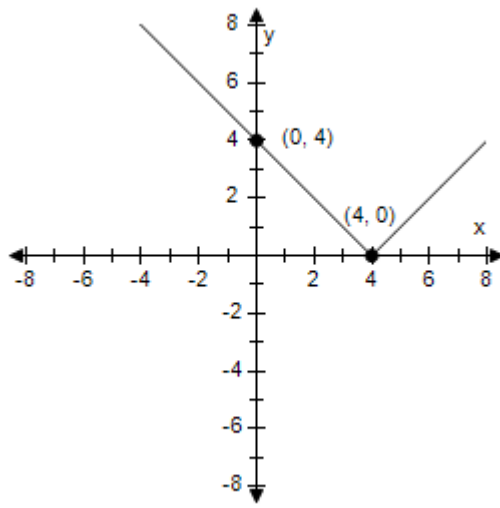


- c. x - intercept: $(4, 0)$
 y - intercept: $(0, 4)$
 No symmetry

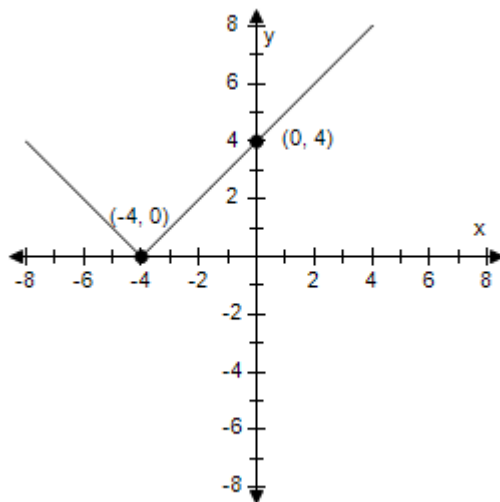


- d. x - intercept: $(4, 0)$
 y - intercept: $(0, 4)$
 No symmetry

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- e. x - intercept: (4, 0)
 y - intercept: (4, 0)
 No symmetry



ANSWER:

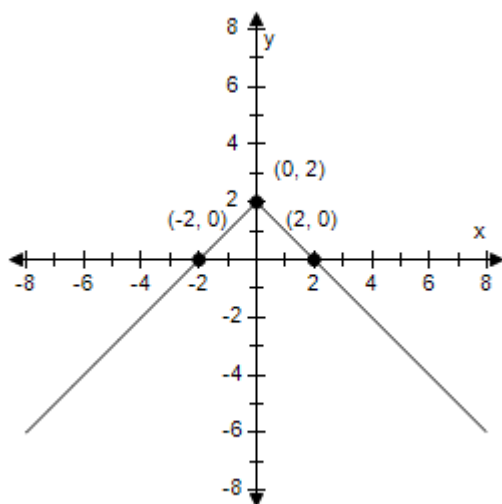
d

20. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

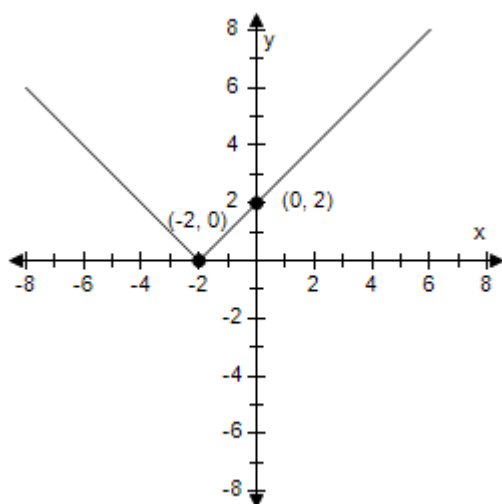
$$y = 2 - |x|$$

- a. x - intercepts: $(\pm 2, 0)$
 y - intercept: (0, 2)
 y -axis symmetry

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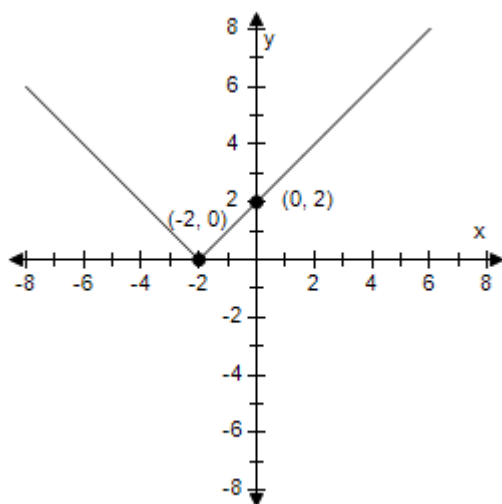


- b. x - intercept: $(-2, 0)$
 y - intercept: $(0, 2)$
 y -axis symmetry

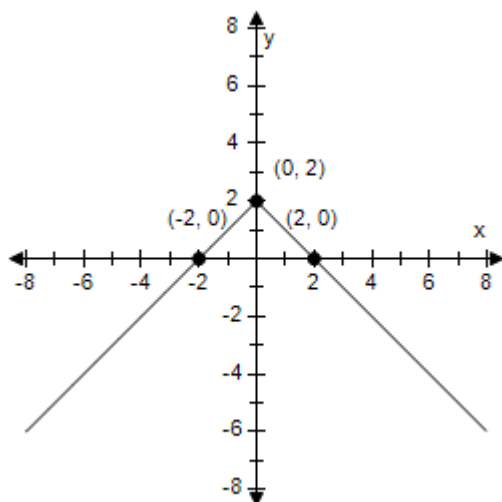


- c. x - intercept: $(2, 0)$
 y - intercepts: $(0, \pm 2)$
 y -axis symmetry

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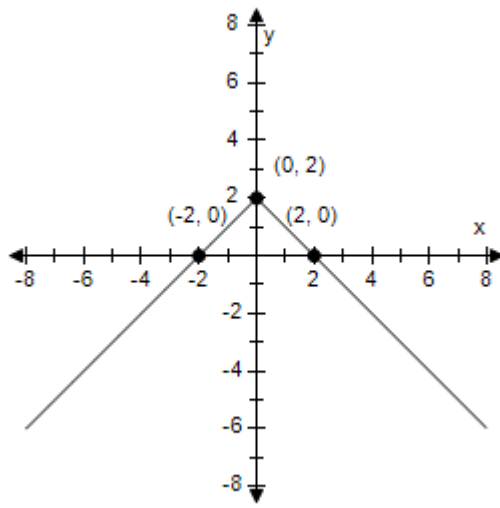


- d. x - intercept: $(2, 0)$
 y - intercept: $(0, 2)$
 y -axis symmetry



- e. x - intercept: $(-2, 0)$
 y - intercept: $(0, 2)$
 y -axis symmetry

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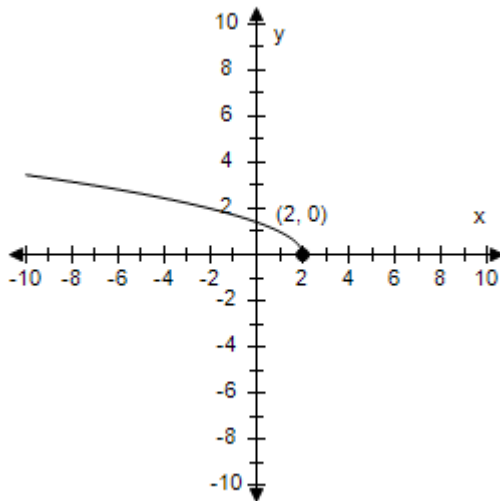
ANSWER:

a

21. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

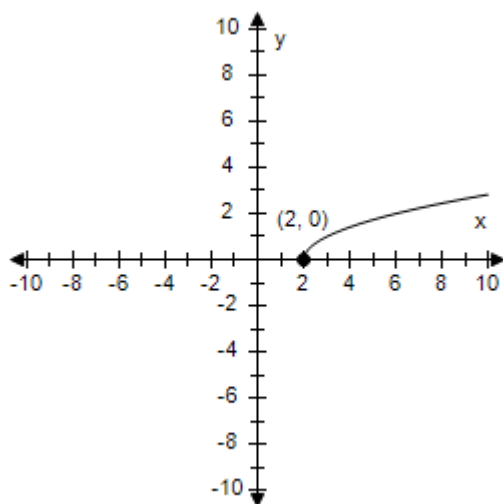
$$y = \sqrt{x-2}$$

- a. x -intercept: (2, 0)
 y -intercept: none
 No symmetry

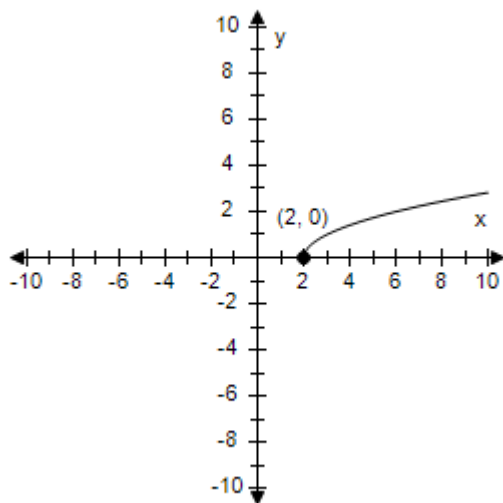


- b. x -intercept: (2, 0)
 y -intercept: none
 No symmetry

Section 1.02 - Graphs of Equations

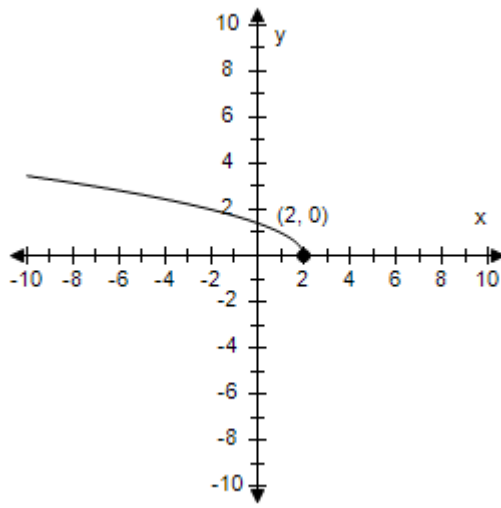


- c. x -intercept: $(2, 0)$
 y -intercept: $(0, \sqrt{2})$
 No symmetry

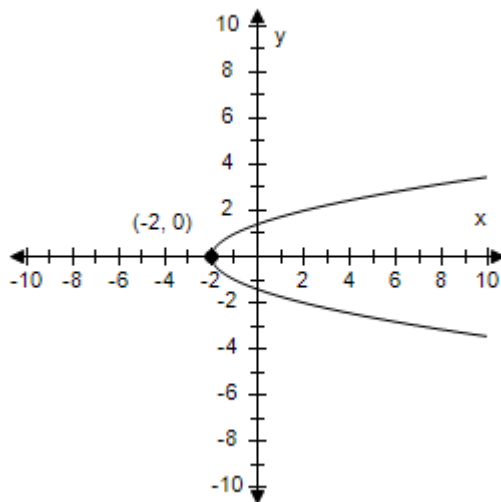


- d. x -intercept: $(-2, 0)$
 y -intercept: none
 No symmetry

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- e. x -intercept: $(-2, 0)$
 y -intercept: none
 No symmetry



ANSWER:

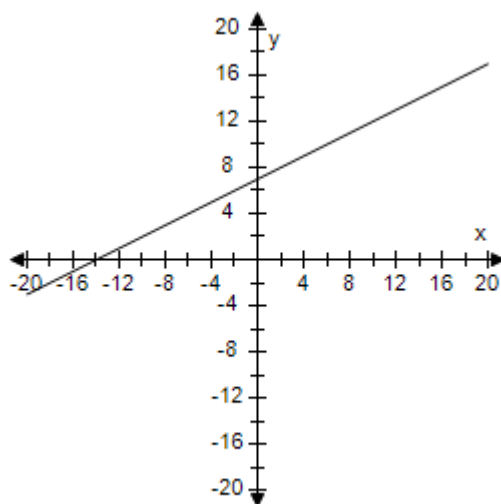
b

22. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

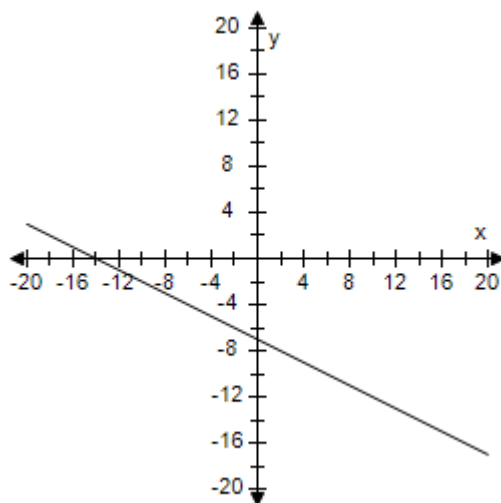
$$y = 7 - \frac{1}{2}x$$

- a. Intercepts: $(0, 7)$, $(-14, 0)$

Section 1.02 - Graphs of Equations

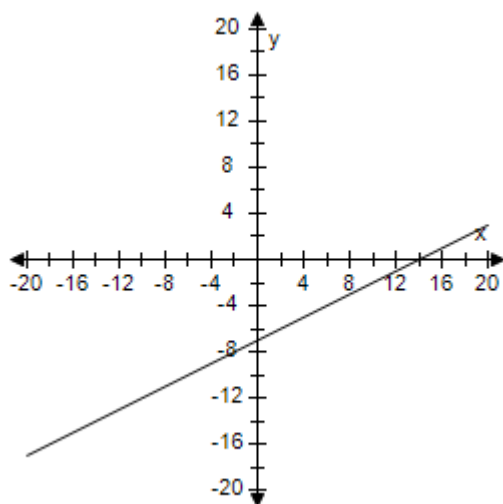


b. Intercepts: $(-14, 0)$, $(0, -7)$

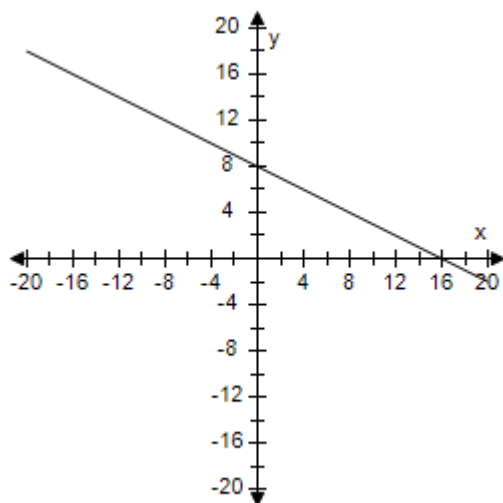


c. Intercepts: $(14, 0)$, $(0, -7)$

Section 1.02 - Graphs of Equations

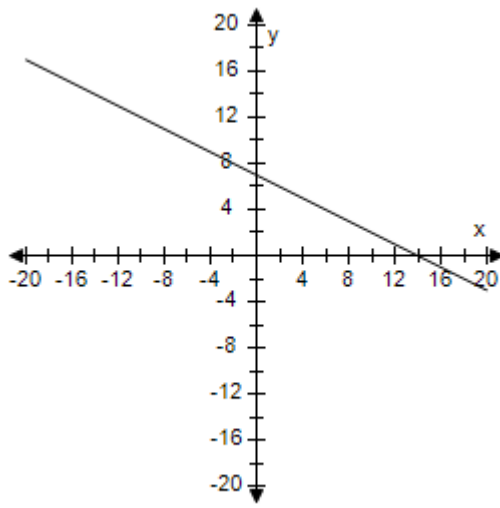


d. Intercepts: (0, 8), (15, 0)



e. Intercepts: (14, 0), (0, 7)

Section 1.02 - Graphs of Equations



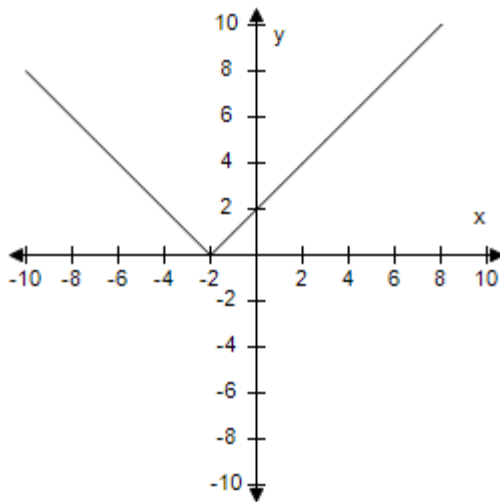
ANSWER:

e

23. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

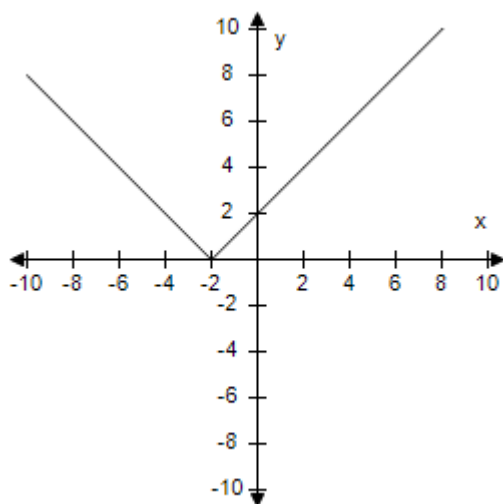
$$y = |x + 2|$$

a. Intercepts: (0, -2), (0, 2)

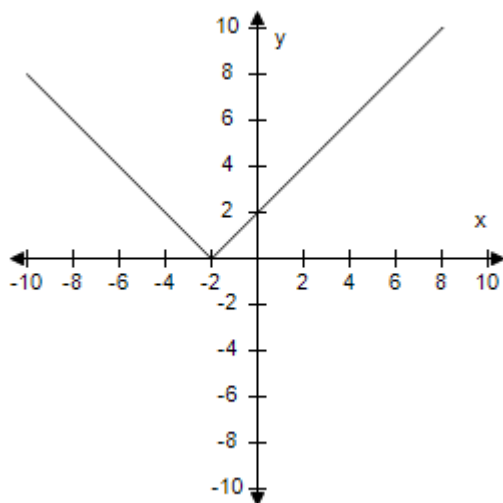


b. Intercepts: (-2, 0), (0, -2)

Section 1.02 - Graphs of Equations

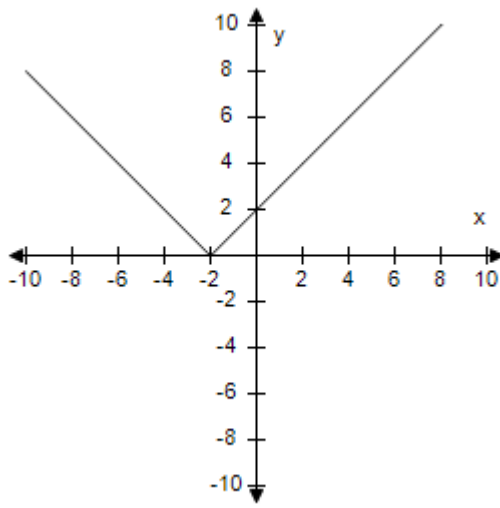


c. Intercepts: $(2, 0)$, $(0, 2)$

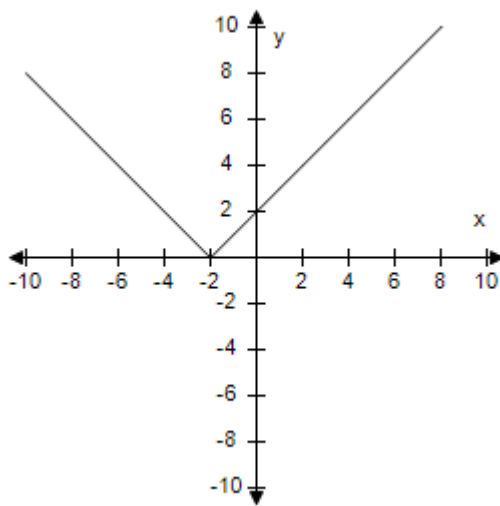


d. Intercepts: $(-2, 0)$, $(0, 2)$

Section 1.02 - Graphs of Equations



e. Intercepts: $(-2, 0)$, $(2, 0)$



ANSWER:

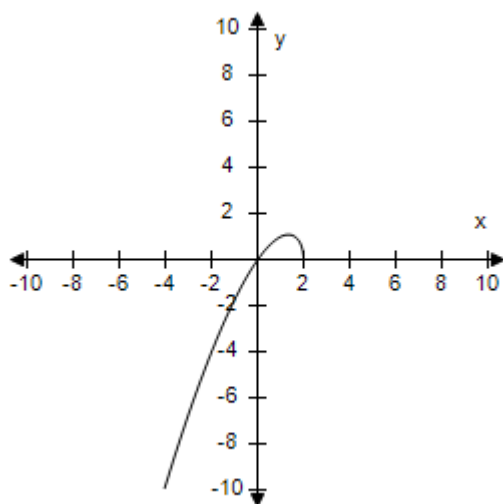
d

24. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

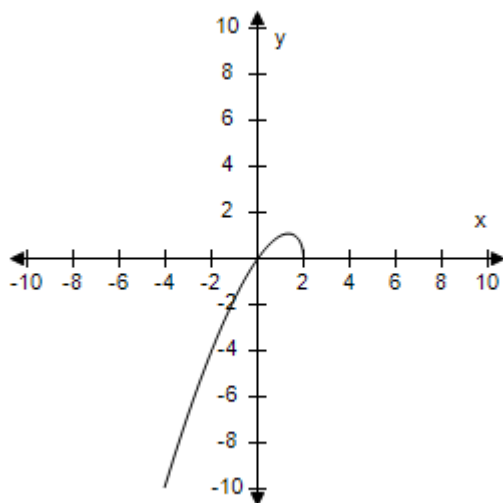
$$y = x\sqrt{x+2}$$

a. Intercepts: $(0, 0)$, $(-2, 0)$

Section 1.02 - Graphs of Equations

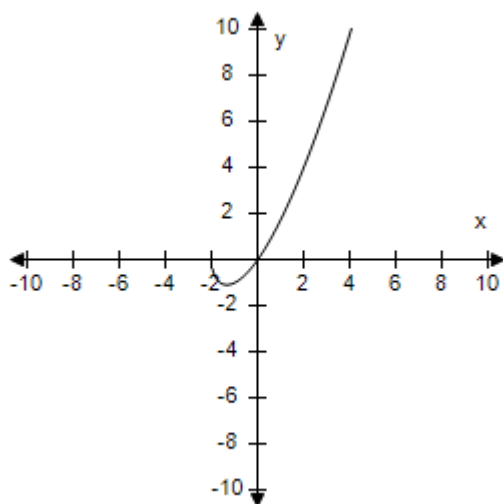


b. Intercepts: $(0, 0)$, $(2, 0)$

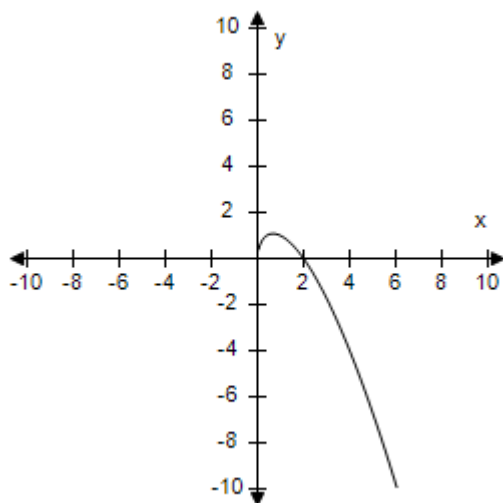


c. Intercepts: $(0, 0)$, $(-2, 0)$

Section 1.02 - Graphs of Equations

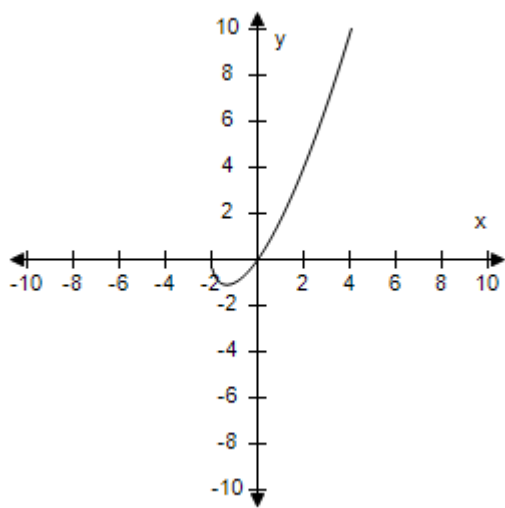


d. Intercepts: $(0, 0)$, $(-2, 0)$



e. Intercepts: $(0, 0)$, $(6, 0)$

Section 1.02 - Graphs of Equations



ANSWER:

c

25. Determine which of the following points lies on the graph of the equation.
 $y = 3 - |x - 1|$

- a. (4, 2)
- b. (6, 0)
- c. (5, 0)
- d. (4, 0)
- e. (4, 1)

ANSWER:

d

26. Complete the table. Use the resulting solution points to sketch the graph of the equation.
 $y = 7 - 4x^2$

x	-2	-1	0	1	2
y					
(x, y)					

x	7	4	-1	-2	-5
y					
(x, y)					

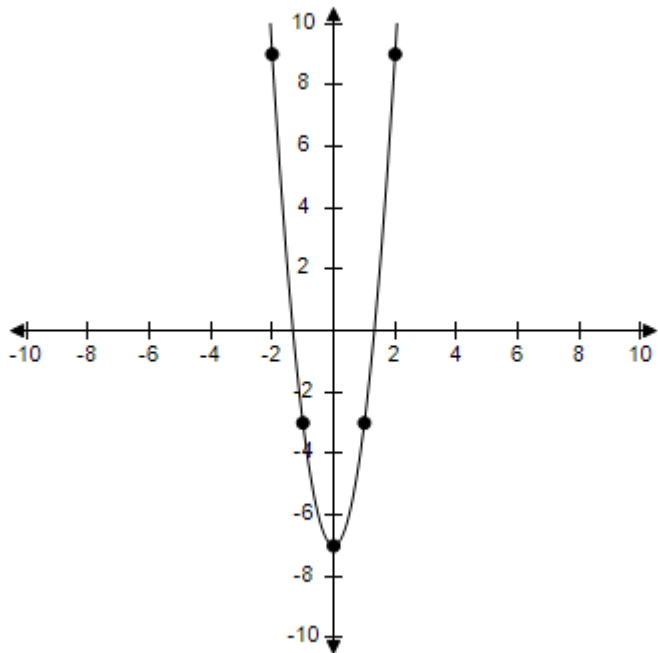
x	7	4	-1	-2	-5
y					
(x, y)					

a.

x	-2	-1	0	1	2
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Section 1.02 - Graphs of Equations

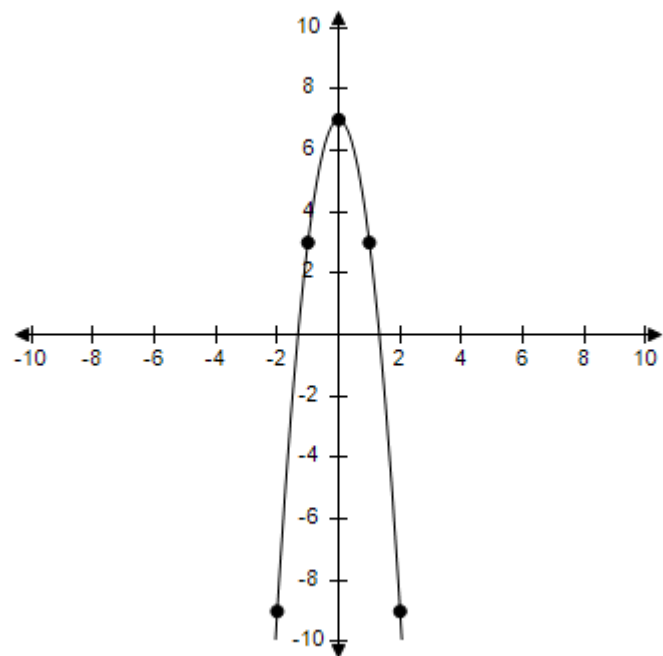
y	9	-3	-7	-3	9
(x, y)	$(-2, 9)$	$(-1, -3)$	$(0, -7)$	$(1, -3)$	$(2, 9)$



b.

x	-2	-1	0	1	2
y	9	-3	-7	-3	9
(x, y)	$(-2, -9)$	$(-1, 3)$	$(0, 7)$	$(1, 3)$	$(2, -9)$

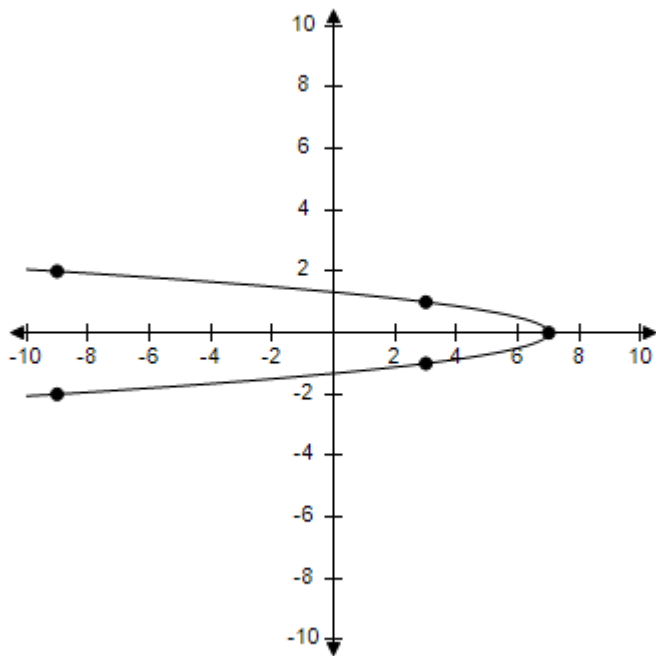
Section 1.02 - Graphs of Equations



c.

x	-2	-1	0	1	2
y	-9	3	7	3	-9
(x, y)	$(-2, -9)$	$(-1, 3)$	$(0, 7)$	$(1, 3)$	$(2, -9)$

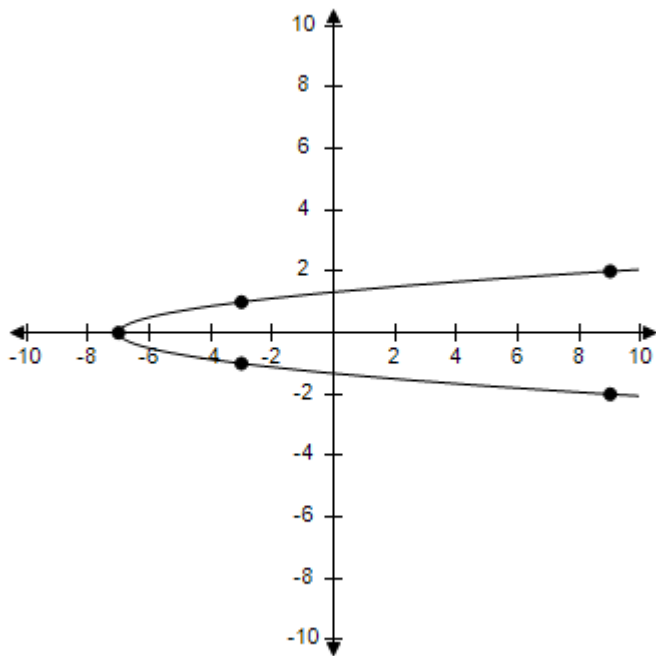
Section 1.02 - Graphs of Equations



d.

x	-2	-1	0	1	2
y	9	-3	-7	-3	9
(x, y)	$(-2, 9)$	$(-1, -3)$	$(0, -7)$	$(1, -3)$	$(2, 9)$

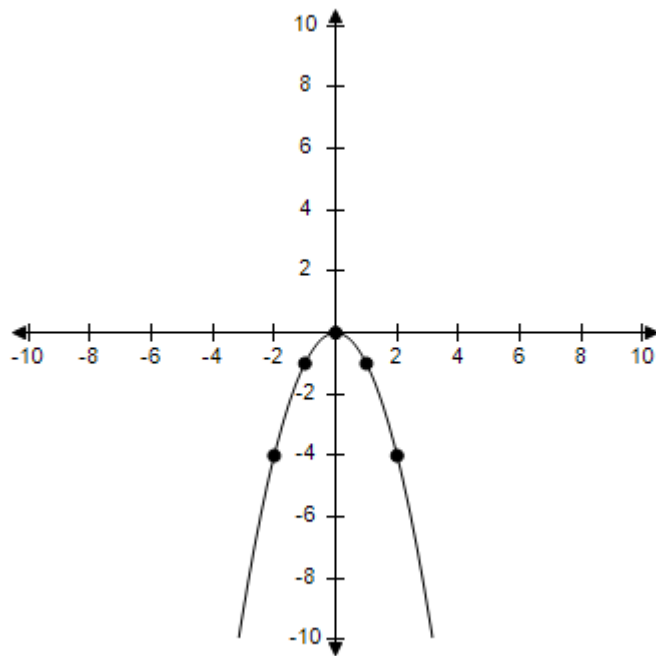
Section 1.02 - Graphs of Equations



e.

x	-2	-1	0	1	2
y	-4	-1	0	-1	-4
(x, y)	(,)	(,)	(,)	(,)	(,)

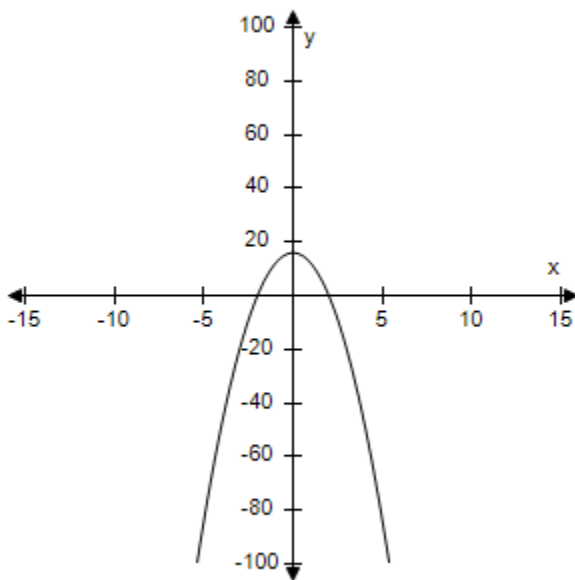
Section 1.02 - Graphs of Equations



ANSWER:

b

27. Graphically estimate the x - and y -intercepts of the graph.
 $y = 16 - 4x^2$



a. x -intercepts: $(\pm 2, 0)$

Section 1.02 - Graphs of Equations

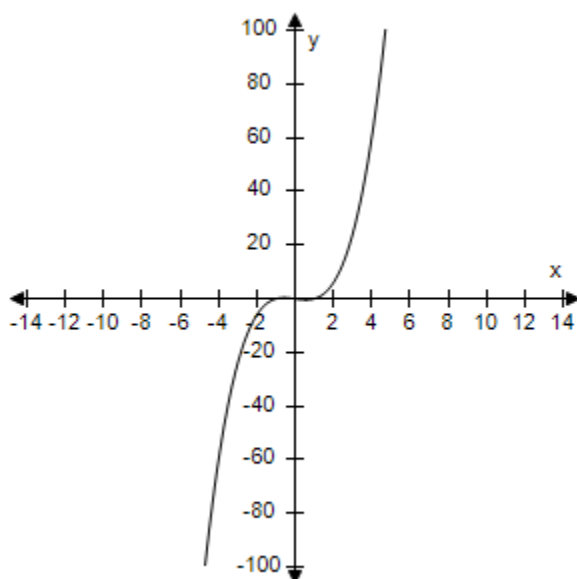
- b. y -intercept: (0, 16)
 x -intercept: (2, 0)
 y -intercept: (0, 16)
- c. x -intercept: (-2, 0)
 y -intercept: (0, 16)
- d. x -intercepts: (± 2 , 0)
 y -intercept: (0, 4)
- e. x -intercept: (0, 2)
 y -intercept: (0, 16)

ANSWER:

a

28. Graphically estimate the x - and y -intercepts of the graph.

$$y = x^3 - x$$



- a. x -intercepts: (± 1 , 0), (0, 0)
 y -intercept: (0, 0)
- b. x -intercepts: (1, 0), (0, 0)
 y -intercept: (0, 0)
- c. x -intercepts: (-1, 0), (0, 0)
 y -intercept: (0, 0)
- d. x -intercepts: (0, ± 1), (0, 0)
 y -intercept: (0, 0)
- e. x -intercepts: (0, 1), (0, 0)
 y -intercept: (0, 0)

ANSWER:

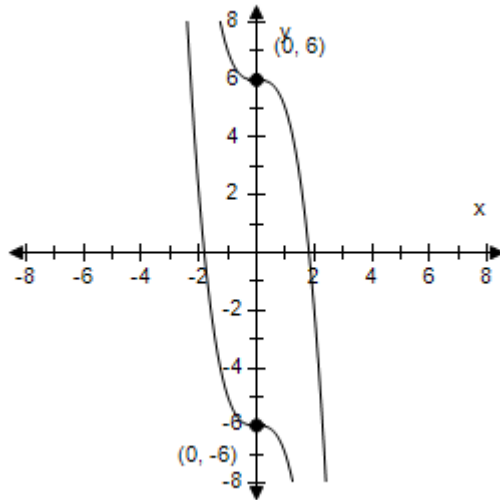
a

29. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

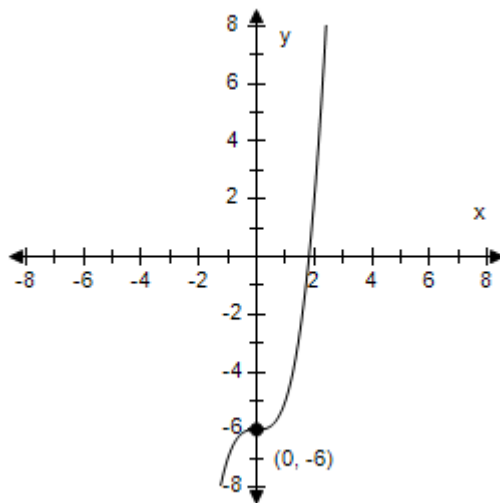
$$y = x^3 - 6$$

Section 1.02 - Graphs of Equations

- a. x - intercept: $(3\sqrt{6}, 0)$
 y - intercept: $(0, \pm 6)$
 No symmetry

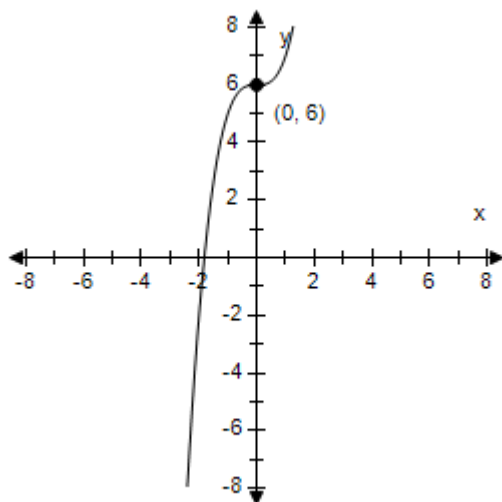


- b. x - intercept: $(3\sqrt{6}, 0)$
 y - intercept: $(0, -6)$
 No symmetry

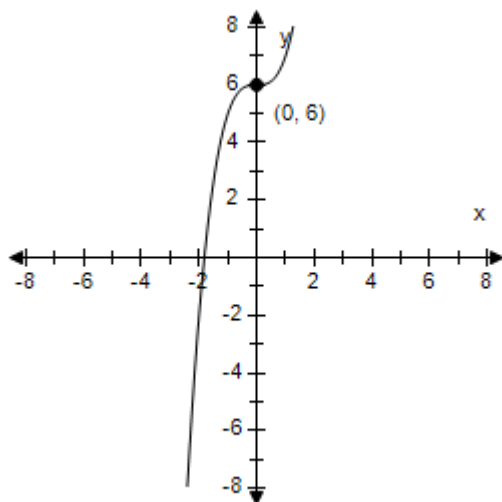


- c. x - intercept: $(3\sqrt{6}, 0)$
 y - intercept: $(0, 6)$
 No symmetry

Section 1.02 - Graphs of Equations

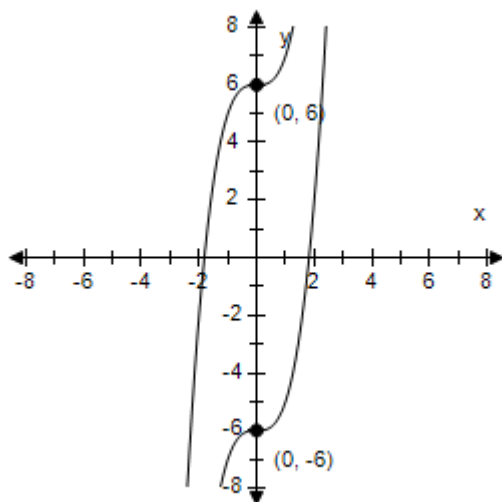


- d. $3\sqrt{-6}$
 x - intercept: $(3\sqrt{-6}, 0)$
 y - intercept: $(0, 6)$
 No symmetry



- e. $3\sqrt{-6}$
 x - intercept: $(3\sqrt{-6}, 0)$
 y - intercept: $(0, \pm 6)$
 No symmetry

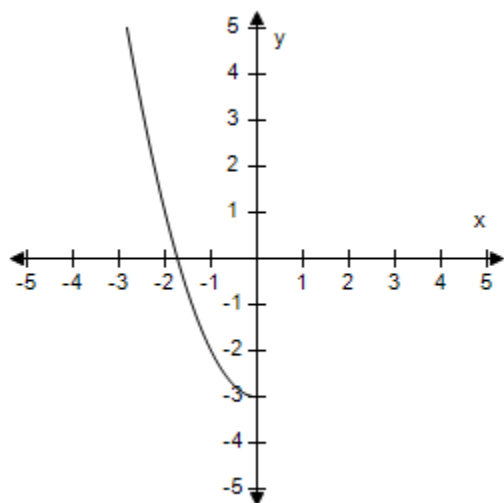
Section 1.02 - Graphs of Equations



ANSWER:

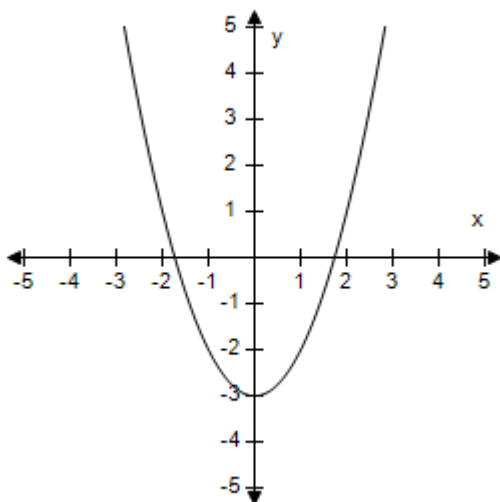
b

30. Assume that the graph has y -symmetry. Select the complete graph of the equation.

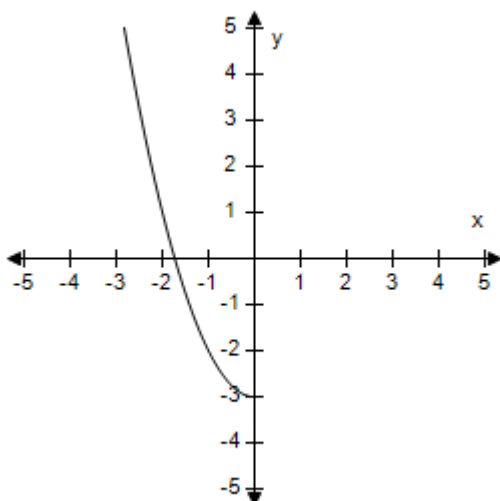


Section 1.02 - Graphs of Equations

a.

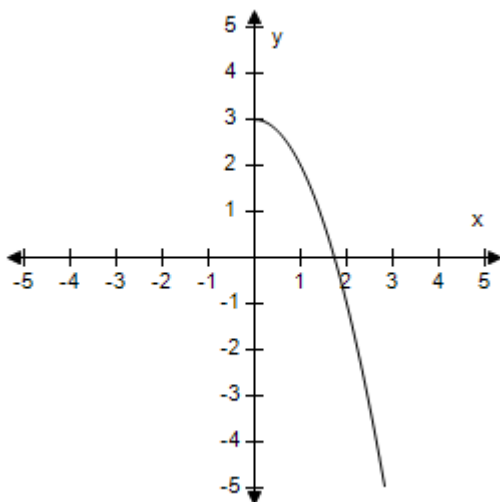


b.

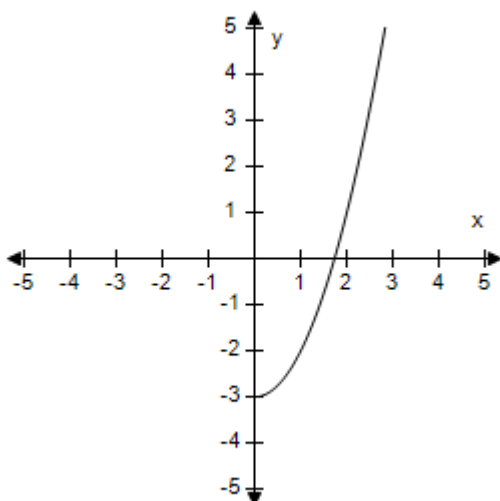


Section 1.02 - Graphs of Equations

c.

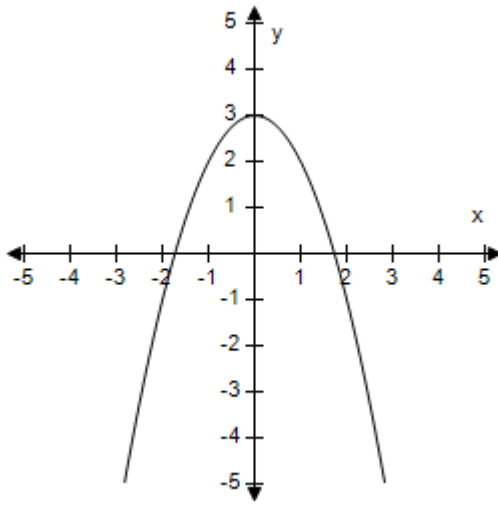


d.



Section 1.02 - Graphs of Equations

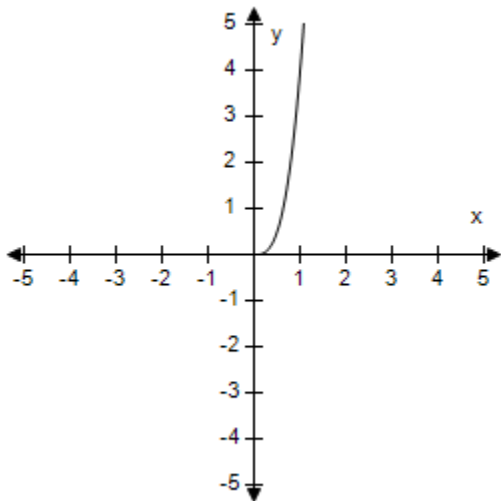
e.



ANSWER:

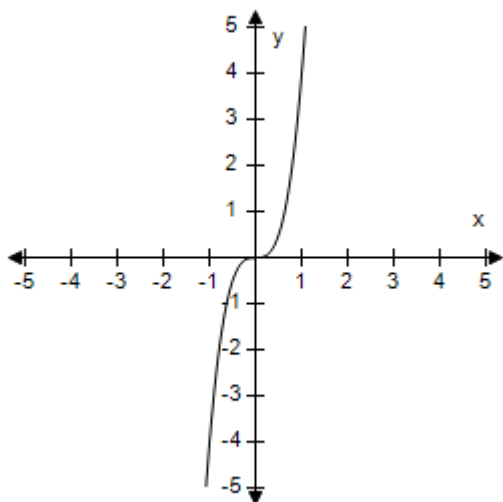
a

31. Assume that the graph has Origin symmetry. Select the complete graph of the equation.

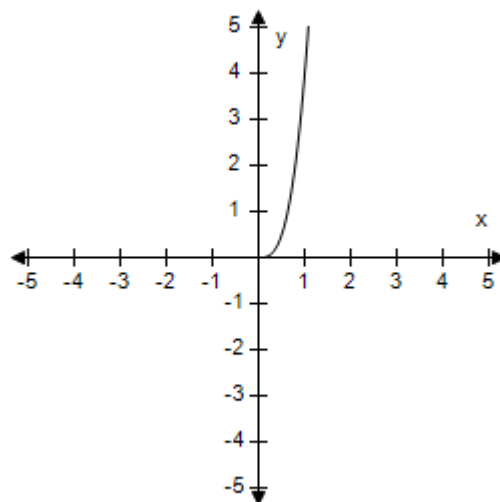


Section 1.02 - Graphs of Equations

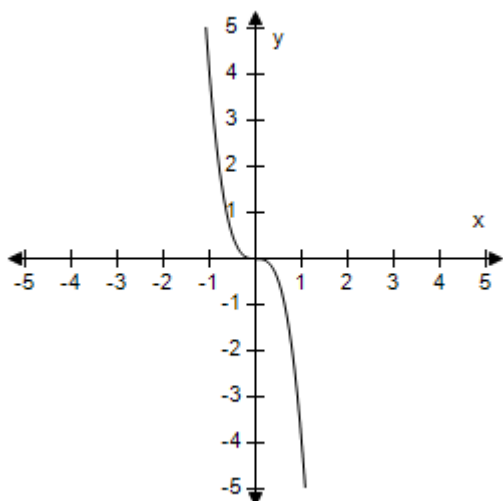
a.



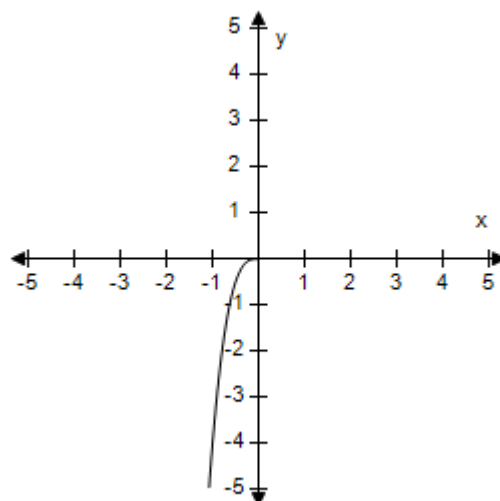
b.



c.

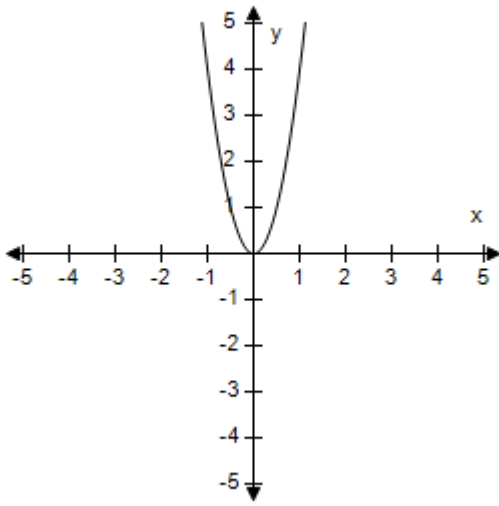


d.



Section 1.02 - Graphs of Equations

e.



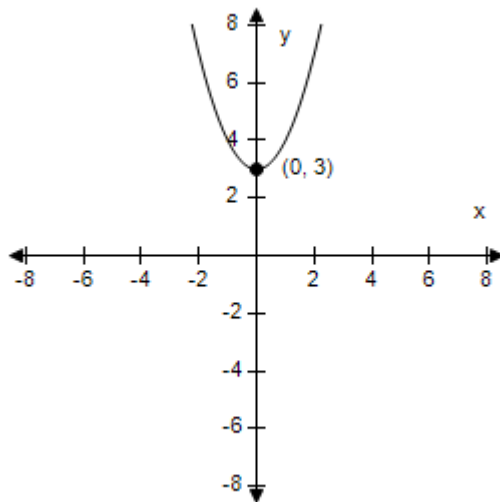
ANSWER:

a

32. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

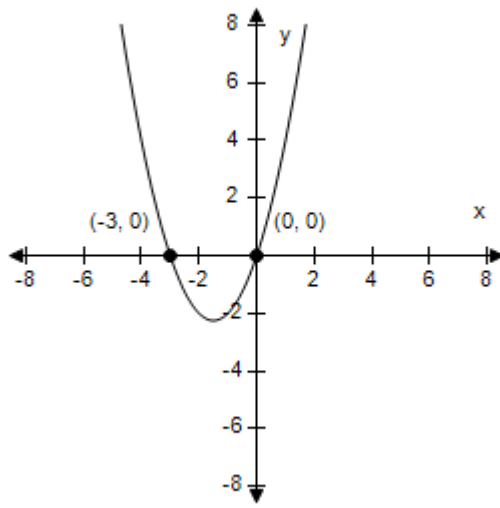
$y = x^2 + 3$

- a. x -intercept : none
 y -intercept : (0, 3)
 The graph has y -symmetry.

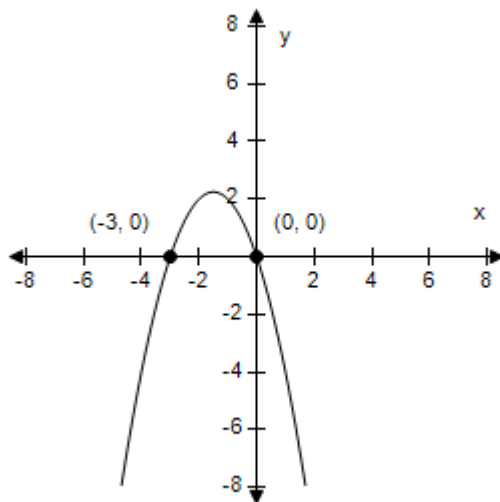


- b. x -intercepts : (0, 0), (-3, 0)
 y -intercept : (0, 0)
 No symmetry

Section 1.02 - Graphs of Equations

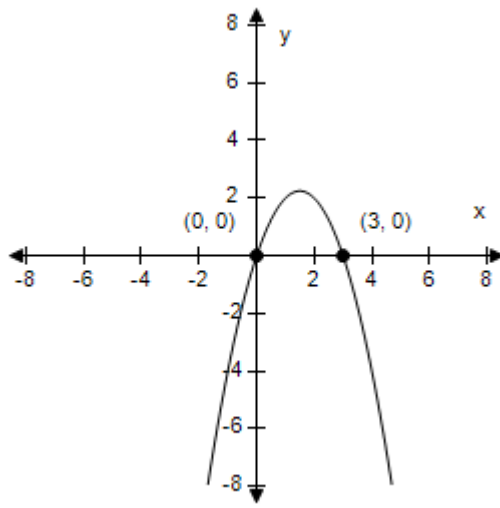


- c. x -intercepts : $(0, 0)$, $(-3, 0)$
 y -intercept : $(0, 0)$
 No symmetry

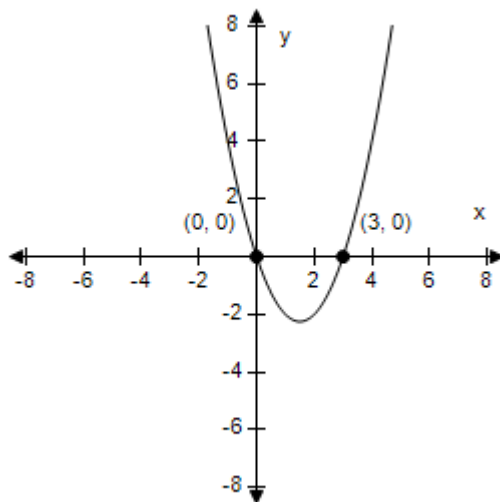


- d. x -intercepts : $(0, 0)$, $(3, 0)$
 y -intercept : $(0, 0)$
 No symmetry

Section 1.02 - Graphs of Equations



- e. x -intercepts : $(0, 0), (3, 0)$
 y -intercept : $(0, 0)$
 No symmetry



ANSWER:

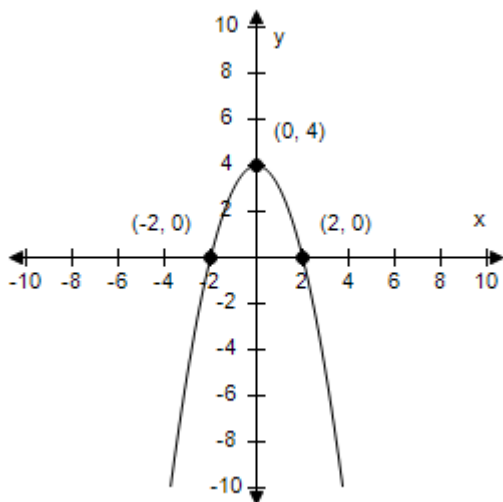
a

33. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$$y = x^2 - 4$$

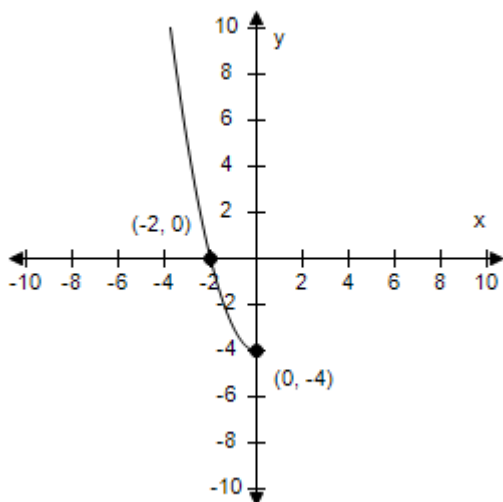
Section 1.02 - Graphs of Equations

a.



Intercepts: $(-2, 0)$, $(2, 0)$, $(0, 4)$

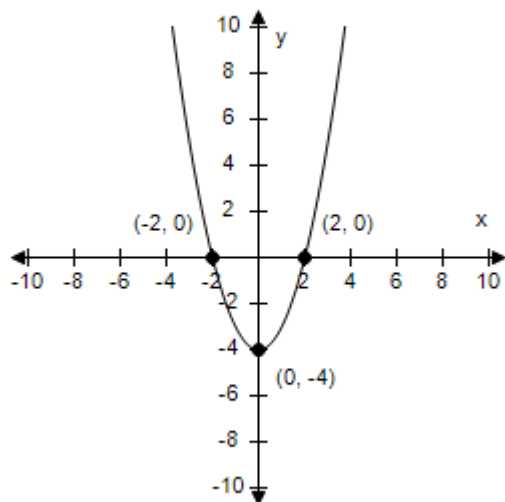
b.



Intercepts: $(-2, 0)$, $(0, -4)$

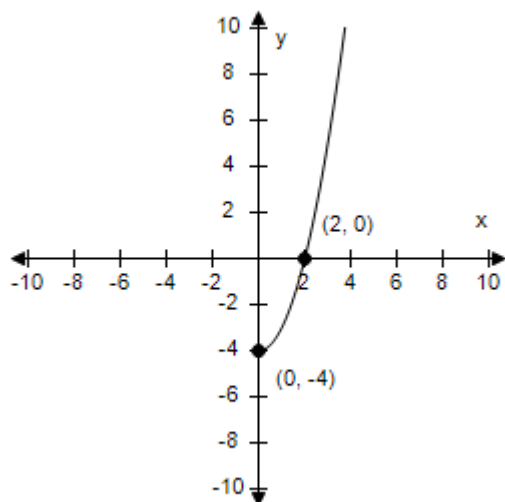
Section 1.02 - Graphs of Equations

c.



Intercepts: $(-2, 0)$, $(2, 0)$, $(0, -4)$

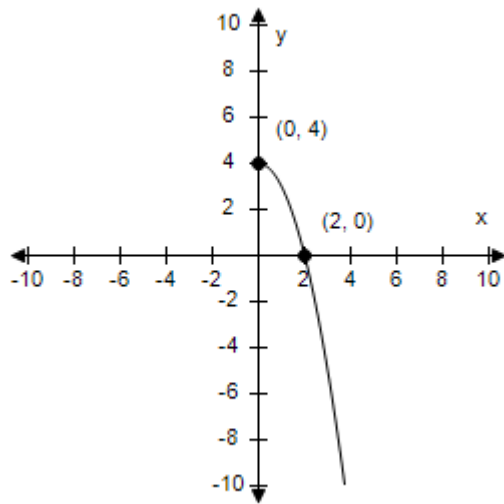
d.



Intercepts: $(2, 0)$, $(0, -4)$

Section 1.02 - Graphs of Equations

e.



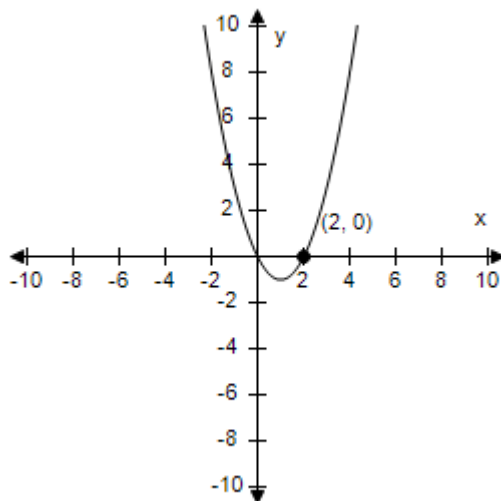
Intercepts: (2, 0), (0, 4)

ANSWER:

c

34. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.
 $y = x^2 - 2x$

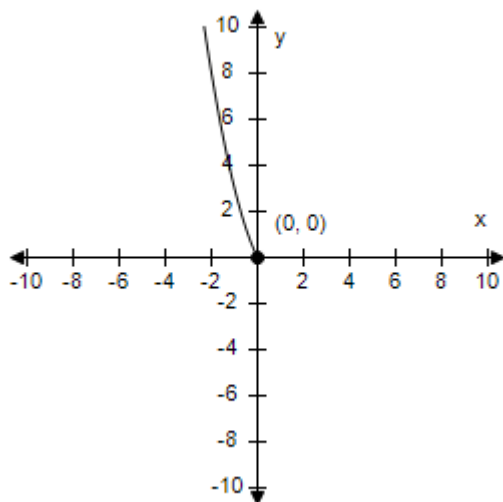
a.



Intercepts: (0, 0), (2, 0)

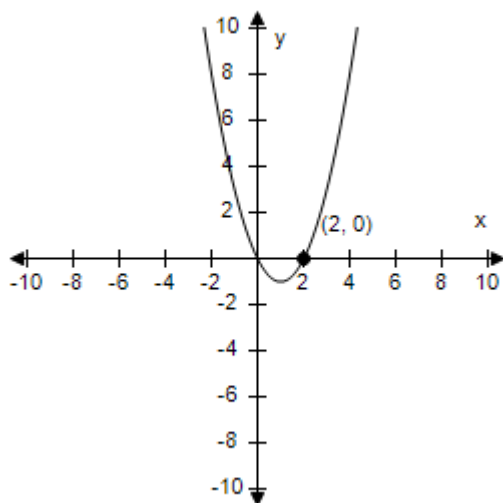
Section 1.02 - Graphs of Equations

b.



Intercepts: (0, 0)

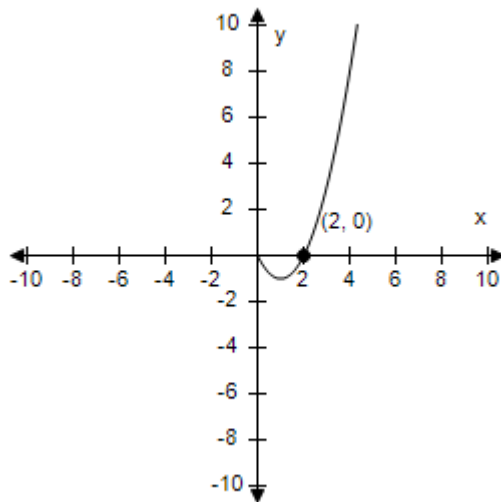
c.



Intercepts: (0, 0), (2, 0)

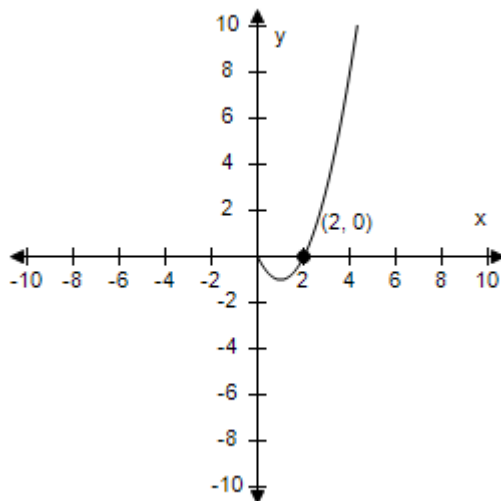
Section 1.02 - Graphs of Equations

d.



Intercepts: (2, 0), (0, 0)

e.



Intercepts: (-2, 0), (0, 0)

ANSWER:

c

35. Determine which point lies on the graph of the equation $y = 3x^2 + 7x + 5$.

- a. (-1, 1)
- b. (0, 1)
- c. (-1, -1)
- d. (1, 0)
- e. (0, -1)

ANSWER:

a

36. Determine which point does **not** lie on the graph of the equation $y = -8 - |x - 5|$.

Section 1.02 - Graphs of Equations

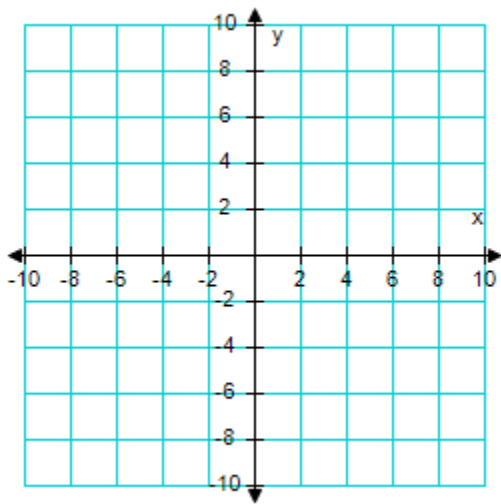
- a. (-2, -15)
- b. (-4, -17)
- c. (7, -10)
- d. (4, -6)
- e. (0, -13)

ANSWER:

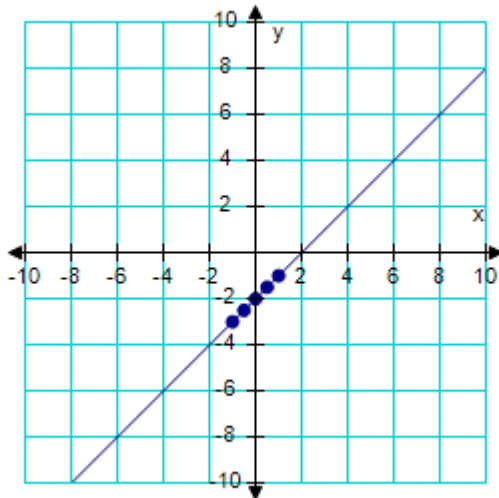
d

37. Create and complete a table to find the x and y coordinates of points that lie on the graph of the equation below. Plot at least 5 points along with the graph of the equation.

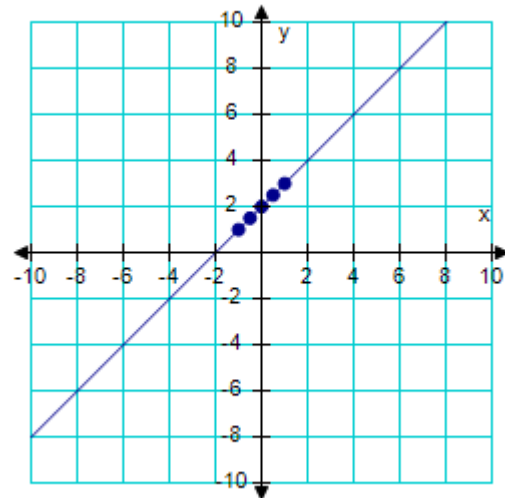
$$y = x + 2$$



a.

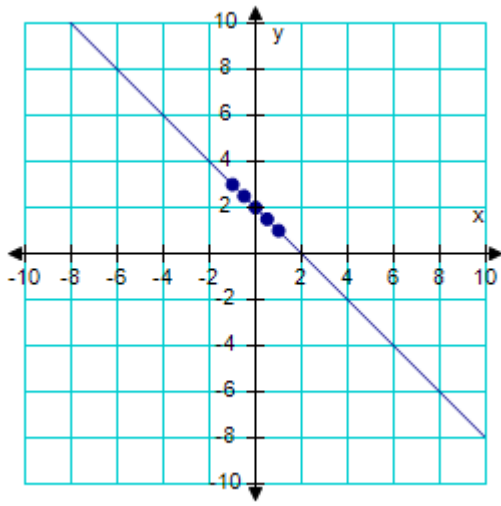


b.

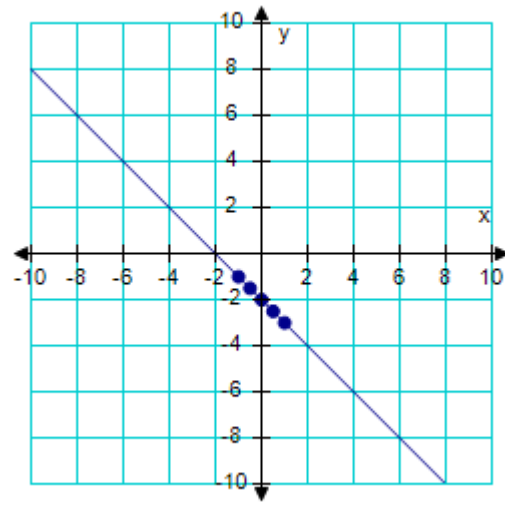


Section 1.02 - Graphs of Equations

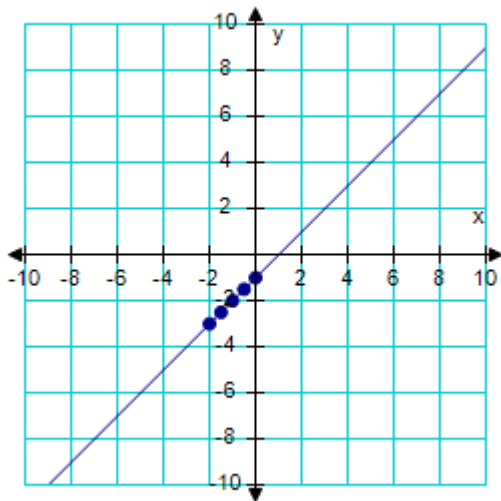
c.



d.



e.



ANSWER:

b

38. Find the x - and y -intercepts of the graph of the equation $y = |13x - 7|$.

a. $\left(-\frac{7}{13}, 0\right)$
 x -intercept:
 y -intercept: $(0, 13)$

b. $\left(-\frac{13}{7}, 0\right)$
 x -intercept:
 y -intercept: $(0, -7)$

c. x -intercept: $(-7, 0)$
 y -intercept: $(0, 13)$

Section 1.02 - Graphs of Equations

d. $\left(-\frac{13}{7}, 0\right)$

x-intercept:

y-intercept: none

e. $\left(\frac{7}{13}, 0\right)$

x-intercept:

y-intercept: (0, 7)

ANSWER:

e

39. Find the x- and y-intercepts of the graph of the equation $y^2 = 8x + 5$.

a. $\left(\frac{5}{8}, 0\right)$

x-intercept:

y-intercept: $(0, -\sqrt{5})$

b. $\left(\frac{5}{8}, 0\right)$

x-intercept:

y-intercepts: $(0, \pm\sqrt{5})$

c. $\left(0, \frac{5}{8}\right)$

x-intercept:

y-intercepts: $(0, \pm\sqrt{5})$

d. $\left(\frac{5}{8}, 0\right)$

x-intercept:

y-intercept: $(0, \sqrt{5})$

e. $\left(\frac{5}{8}, 0\right)$

x-intercept:

y-intercept: $(0, \sqrt{5})$

ANSWER:

b

40. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.

$3x + 2y^6 = 0$

- Symmetric with respect to the origin.
- No symmetry.
- Symmetric with respect to the y-axis.
- Symmetric with respect to the x-axis.

Section 1.02 - Graphs of Equations

ANSWER:

d

41. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.

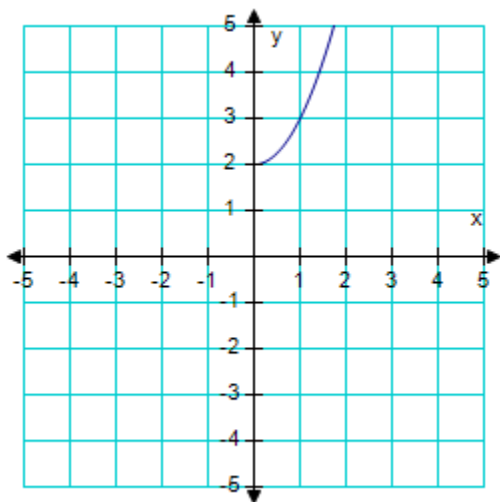
$$y = 40x^{20} - x^{10} - 3$$

- No symmetry.
- Symmetric with respect to the y -axis.
- Symmetric with respect to the origin.
- Symmetric with respect to the x -axis.

ANSWER:

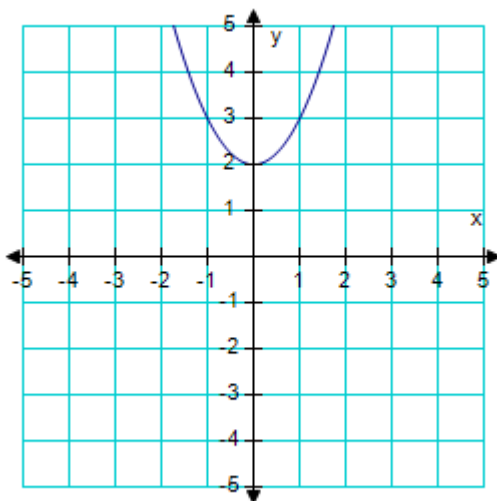
b

42. Assume the graph has the indicated type of symmetry. Sketch the complete graph.

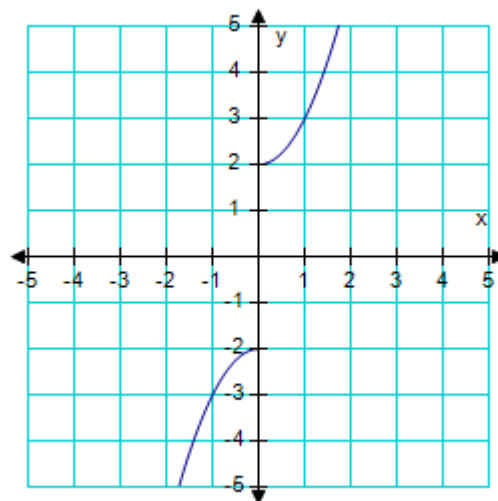


symmetric with respect to the *origin*.

a.

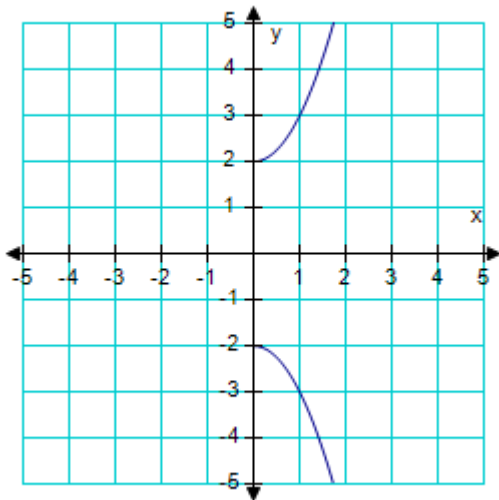


b.

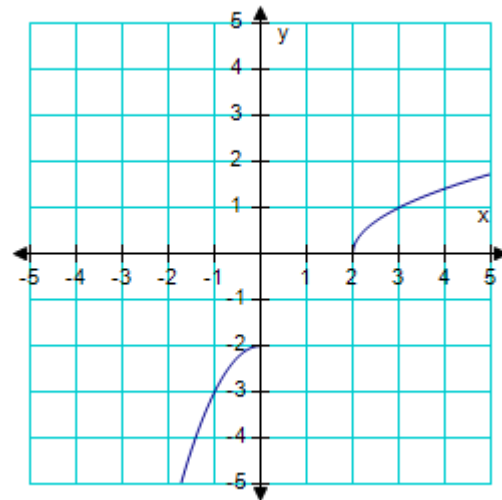


Section 1.02 - Graphs of Equations

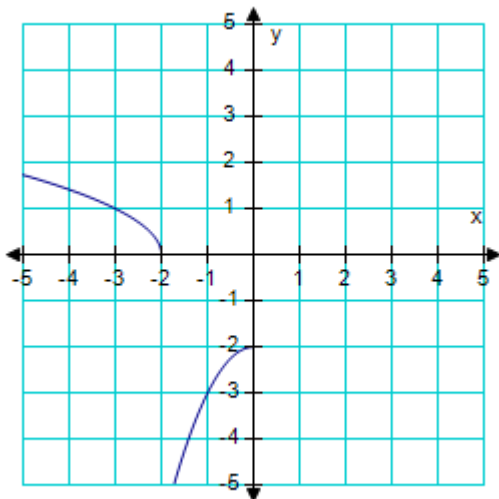
c.



d.



e.



ANSWER:

b

43. Find the x - and y -intercepts of the graph of the equation $y = 36 - 6x$.

- x -intercept: $(6, 0)$
 y -intercept: $(0, -6)$
- x -intercept: $(36, 0)$
 y -intercept: $(0, 6)$
- x -intercept: $(-6, 0)$
 y -intercept: $(0, -36)$
- x -intercept: $(36, 0)$
 y -intercept: $(0, 36)$
- x -intercept: $(6, 0)$
 y -intercept: $(0, 36)$

ANSWER:

e

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44. Find the x - and y -intercepts of the graph of the equation $y = \sqrt{-8x - 7}$.

a. $\left(-\frac{8}{7}, 0\right)$
 x -intercept:
 y -intercept: none

b. $\left(-\frac{7}{8}, 0\right)$
 x -intercept:
 y -intercept: $(0, -7)$

c. $(7, 0)$
 x -intercept:
 y -intercept: none

d. $(-8, 0)$
 x -intercept:
 y -intercept: $(0, 7)$

e. $\left(-\frac{7}{8}, 0\right)$
 x -intercept:
 y -intercept: none

ANSWER:

e

45. Write the standard form of the equation of the circle with the given characteristics.
center: $(-1, -5)$; radius: 6

a. $(x - 1)^2 + (y - 5)^2 = 36$

b. $(x + 5)^2 + (y + 1)^2 = 6$

c. $(x + 5)^2 + (y + 1)^2 = 36$

d. $(x - 5)^2 + (y - 1)^2 = 6$

e. $(x + 1)^2 + (y + 5)^2 = 36$

ANSWER:

e

46. Write the standard form of the equation of the circle with the given characteristics.
center: $(-5, -4)$; solution point: $(-3, -7)$

a. $(x + 5)^2 + (y + 4)^2 = 13$

b. $(x - 5)^2 + (y + 4)^2 = 1$

c. $(x - 5)^2 + (y - 4)^2 = 13$

Section 1.02 - Graphs of Equations

d. $(x-5)^2 + (y-4)^2 = 17$

e. $(x+5)^2 + (y-4)^2 = 17$

ANSWER:

a

47. Write the standard form of the equation of the circle with the given characteristics.
endpoints of a diameter: (3, 4), (7, 8)

a. $(x-5)^2 + (y-6)^2 = 8$

b. $(x-6)^2 + (y-5)^2 = 8$

c. $(x+5)^2 + (y+6)^2 = 8$

d. $(x+5)^2 + (y-6)^2 = 340$

e. $(x-5)^2 + (y+6)^2 = 340$

ANSWER:

a

48. Find the center and radius of the circle $x^2 + y^2 = 49$.

a. center: (0, 0), radius: 11

b. center: (-1, 1), radius: 11

c. center: (0, 0), radius: 7

d. center: (-1, -1), radius: 7

e. center: (-7, -11), radius: 7

ANSWER:

c

49. Find the center and radius of the circle $(x-5)^2 + (y-1)^2 = 25$.

a. center: (1, 5), radius 5

b. center: (5, 1), radius 25

c. center: (-5, -1), radius 5

d. center: (-5, -1), radius 25

e. center: (5, 1), radius 5

ANSWER:

e

50. You purchase a house for \$250,000. The depreciated value, y , after x years is given by $y = 250,000 - 12,500x$. Sketch the graph of the equation given $0 \leq x \leq 8$.

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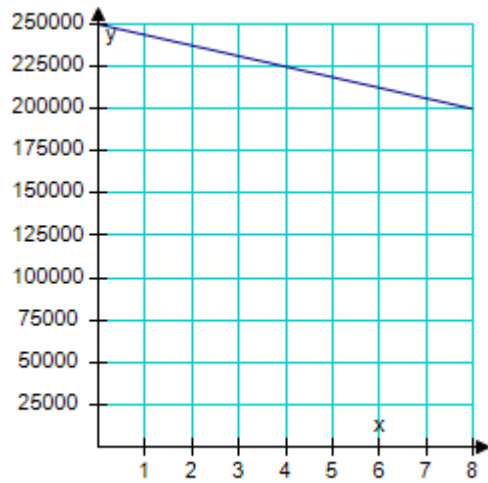
a.



b.



c.

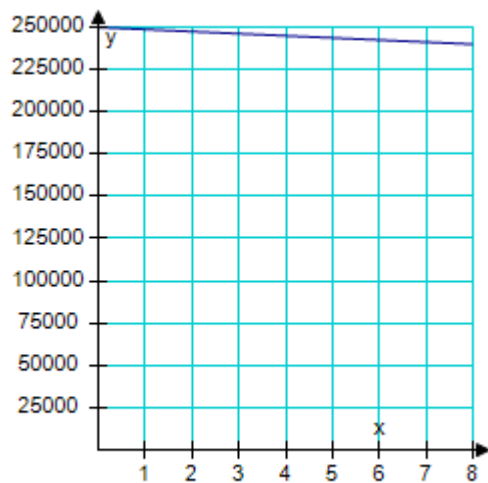


d.



Section 1.02 - Graphs of Equations

e.



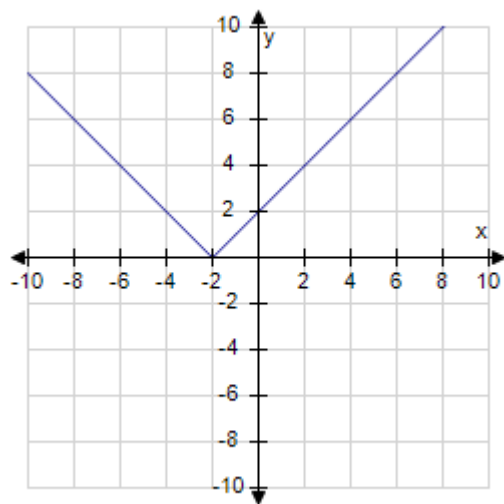
ANSWER:

a

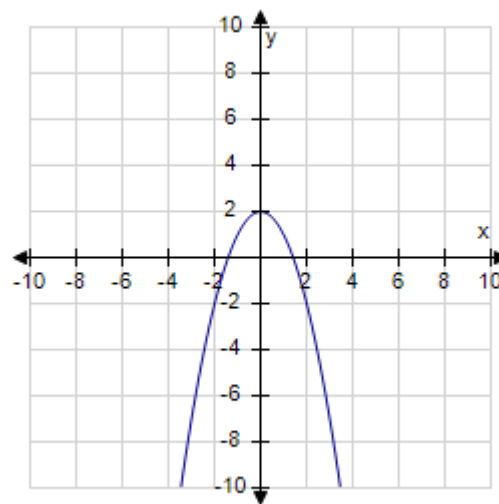
51. Find the graph of the equation.

$$f(x) = |x - 2|$$

a.

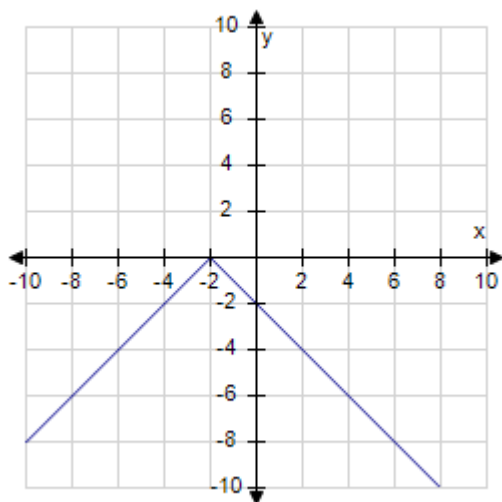


b.

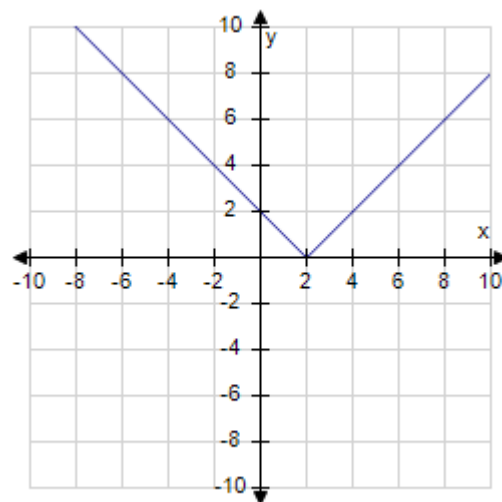


Section 1.02 - Graphs of Equations

c.



d.



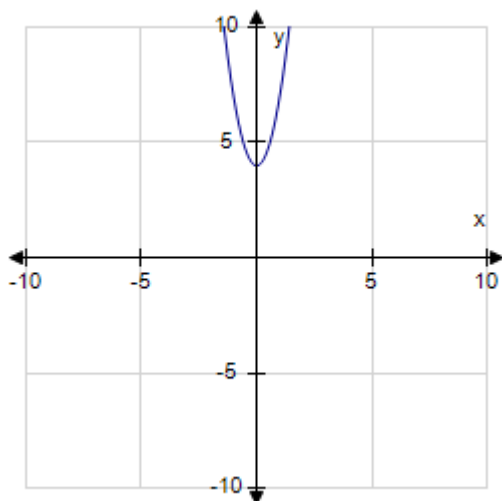
ANSWER:

d

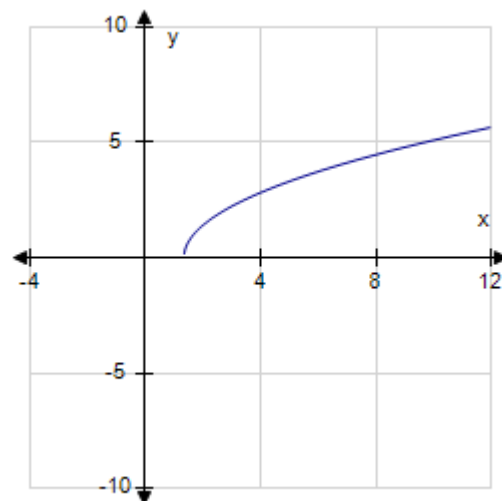
52. Find the graph of the equation.

$$f(x) = \sqrt{3x - 4}$$

a.

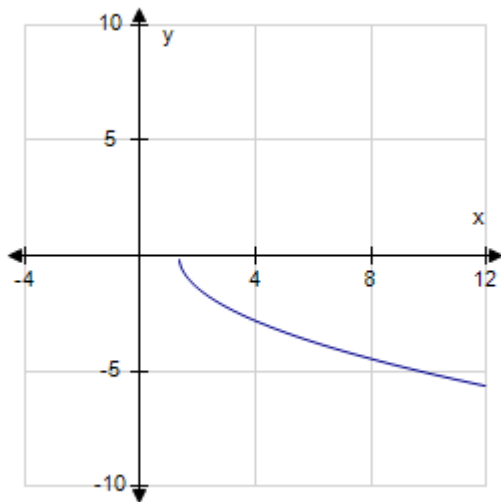


b.

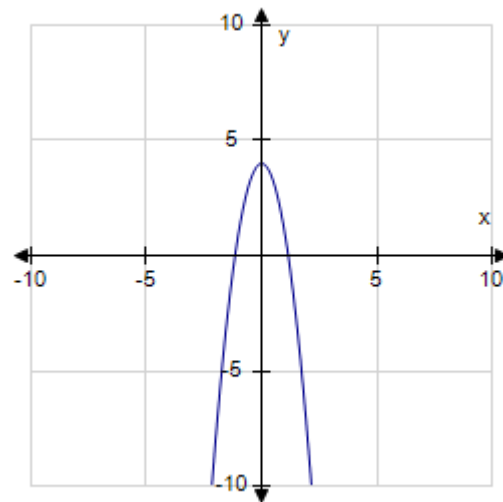


Section 1.02 - Graphs of Equations

c.



d.



ANSWER:

b

53. Find the value of y that corresponds to $x = -4$ in the graph of the equation $2x + 3y = 13$.

- a. 9
- b. -7
- c. -9
- d. 21
- e. 7

ANSWER:

e

54. Find the value of x that corresponds to $y = 7$ in the graph of the equation $4x - 3y = -37$.

- a. 4
- b. -16
- c. -3
- d. 3
- e. -4

ANSWER:

e

55. Find the y -intercept of the graph of the equation $y = 3x + 18$.

- a. (0, 3)
- b. (18, 0)
- c. (-6, 0)
- d. (0, 18)
- e. (0, -6)

ANSWER:

d

56. Find the x -intercept of the graph of the equation $y = 3x + 15$.

- a. (0, -5)

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- b. (0, 15)
- c. (15, 0)
- d. (0, 3)
- e. (-5, 0)

ANSWER:

e

57. Find the y-intercept of the graph of the equation $4y = 3x + 12$.

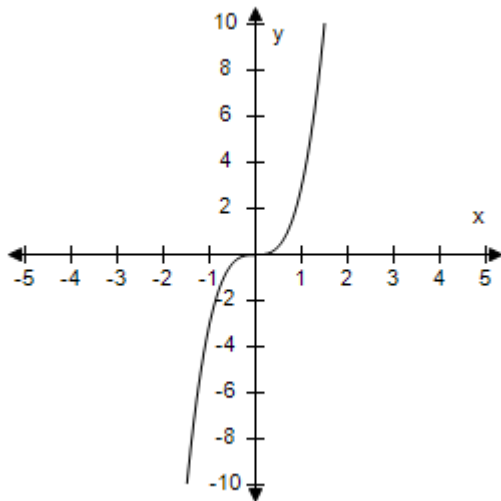
- a. (0, -3)
- b. (-4, 0)
- c. (0, 3)
- d. (0, -4)
- e. (0, 12)

ANSWER:

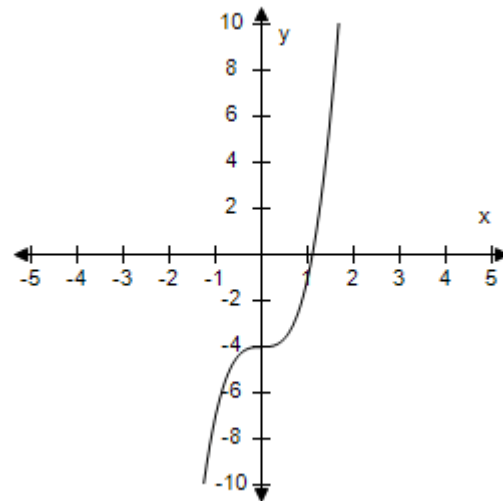
c

58. Sketch the graph of the equation $y = 3x^2 - 2$.

a.

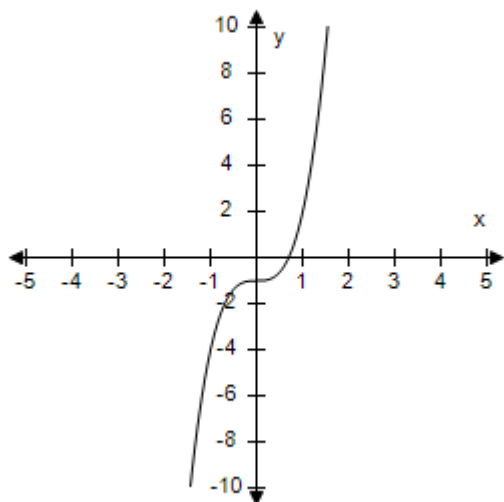


b.

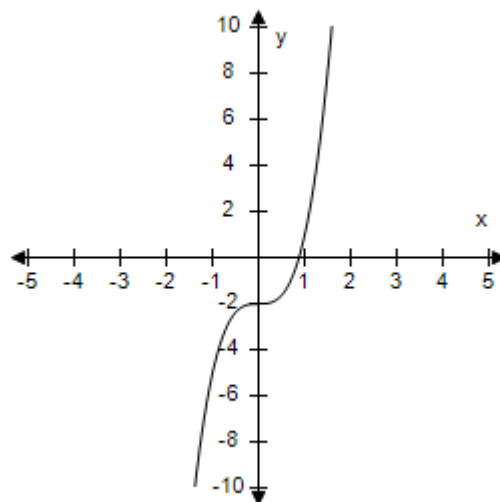


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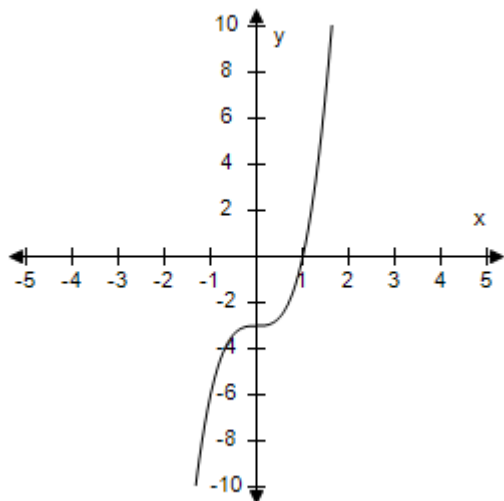
c.



d.



e.



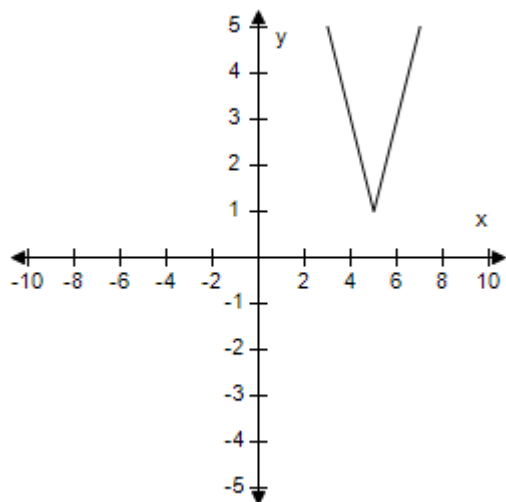
ANSWER:

d

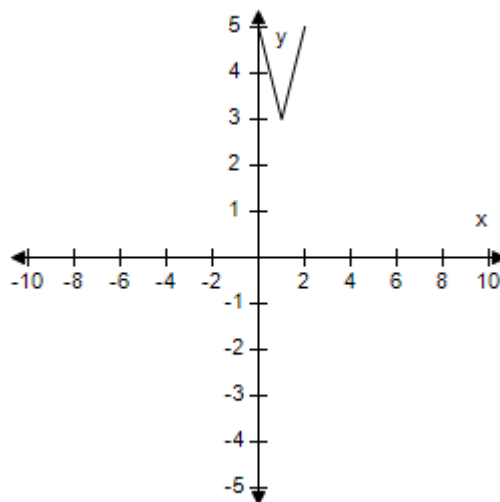
59. Sketch the graph of the equation $y = 2|x - 3| + 1$.

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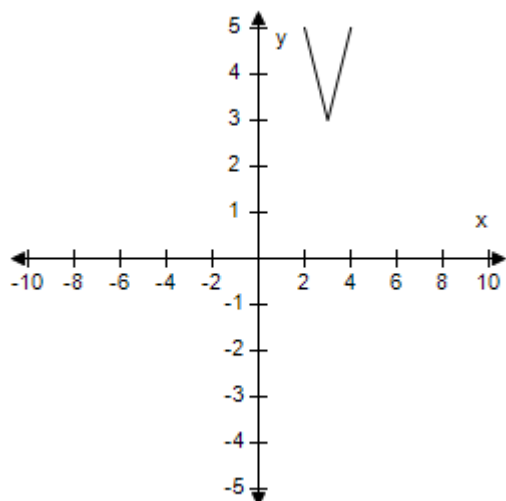
a.



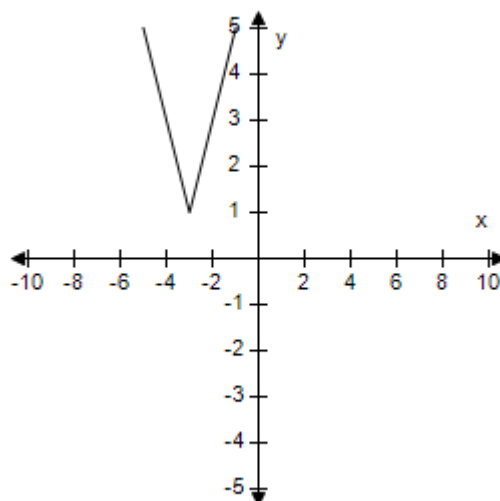
b.



c.

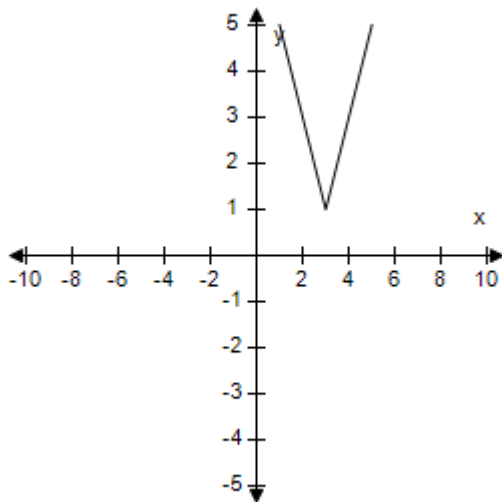


d.



Section 1.02 - Graphs of Equations

e.



ANSWER:

e

60. Find the x -intercept of the graph of the equation $y = 3\sqrt{x-6}$.

- a. (0, -6)
- b. (0, 6)
- c. (6, 0)
- d. (-6, 0)
- e. (0, -18)

ANSWER:

c

61. Find any x - or y -intercepts for the graph of the equation $y = x^2 - 8x + 12$.

- a. x -intercept: (0, 12)
 y -intercepts: (2, 0), (6, 0)
- b. x -intercepts: (-2, 0), (-6, 0)
 y -intercept: (0, 12)
- c. x -intercepts: (2, 0), (6, 0)
 y -intercepts: none
- d. x -intercepts: (0, 2), (0, 6)
 y -intercept: (12, 0)
- e. x -intercepts: (2, 0), (6, 0)
 y -intercept: (0, 12)

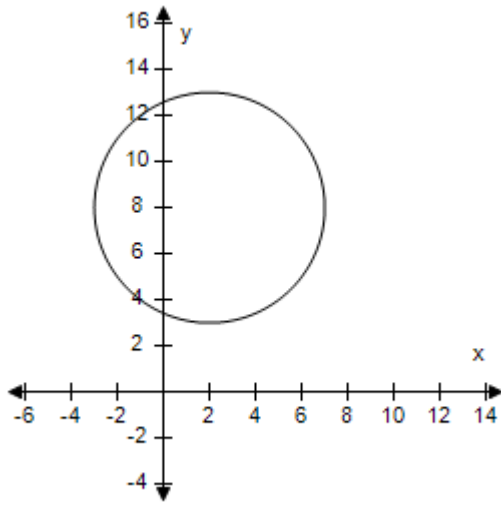
ANSWER:

e

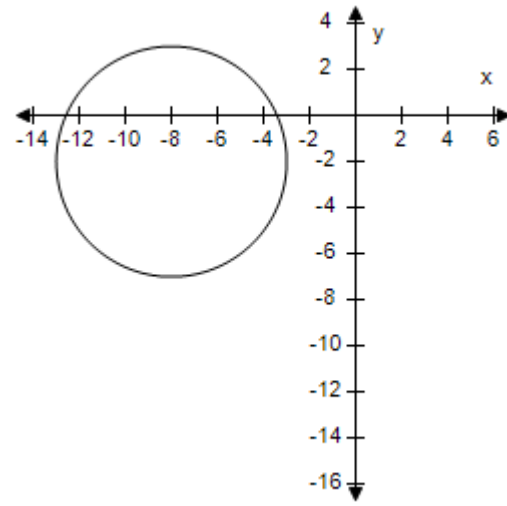
62. Graph the circle $(x-2)^2 + (y-8)^2 = 25$.

Section 1.02 - Graphs of Equations

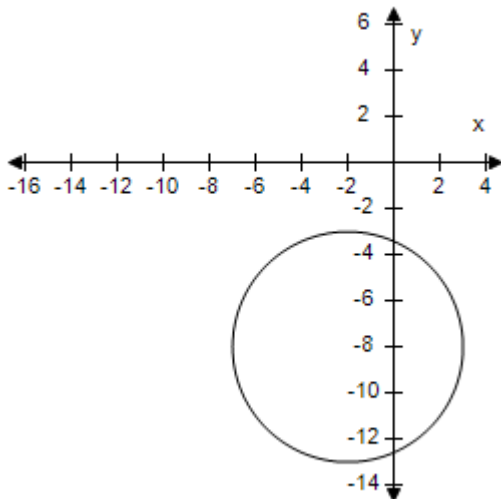
a.



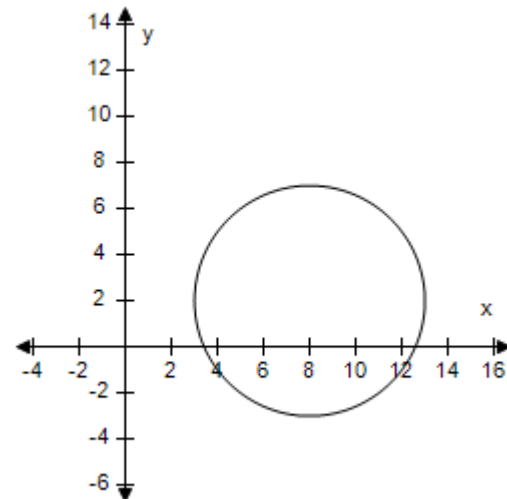
b.



c.



d.



e. None of the above.

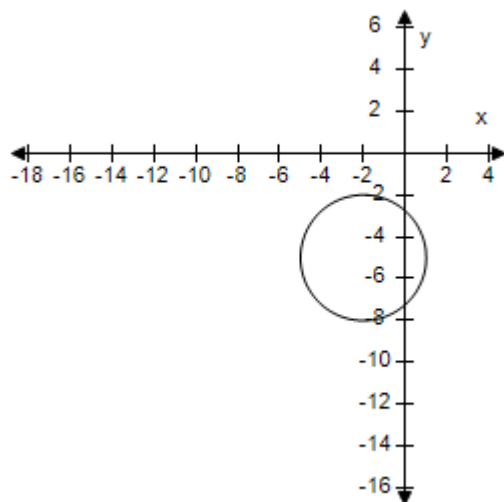
ANSWER:

a

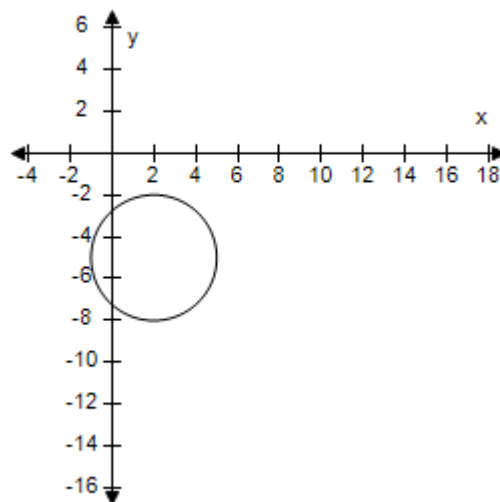
63. Graph the circle $(x + 2)^2 + (y - 5)^2 = 9$.

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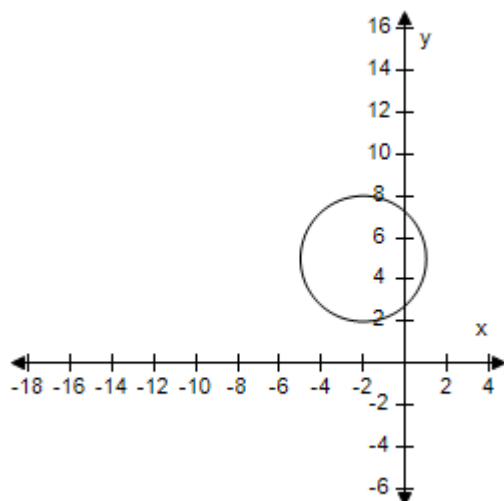
a.



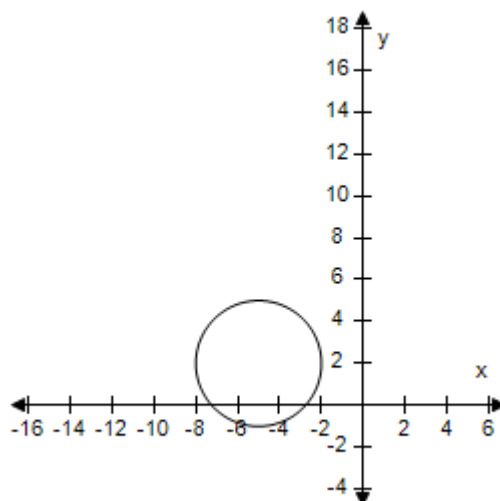
b.



c.



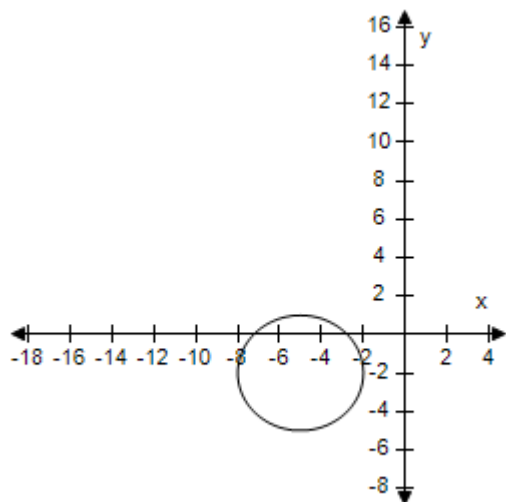
d.



Name _____ Class _____ Date _____
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Section 1.02 - Graphs of Equations

e.



ANSWER:

c