

Test Bank

Calculus

TENTH EDITION

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Bruce Edwards



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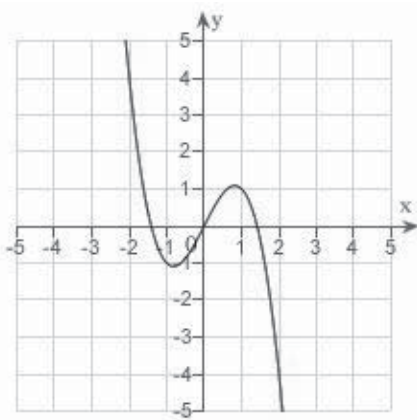
P.1 Graphs and Models

Multiple Choice

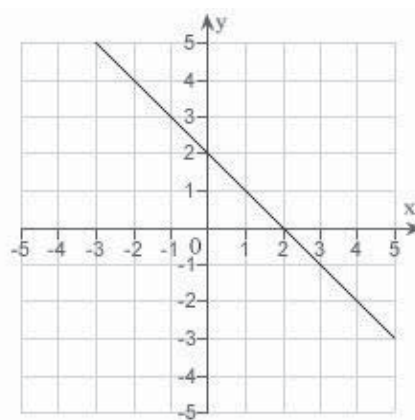
Identify the choice that best completes the statement or answers the question.

____ 1. Which of the following is the correct graph of $y = -\sqrt{2 - x^2}$?

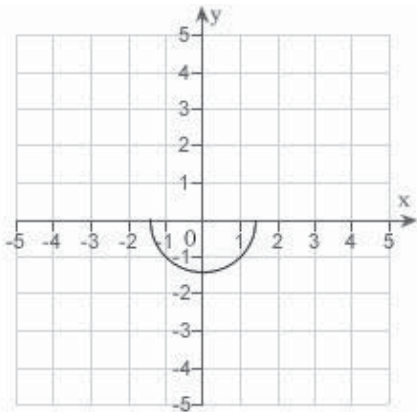
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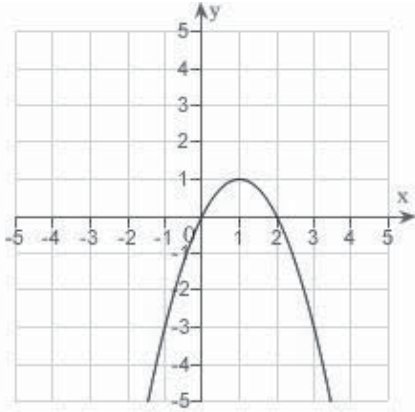
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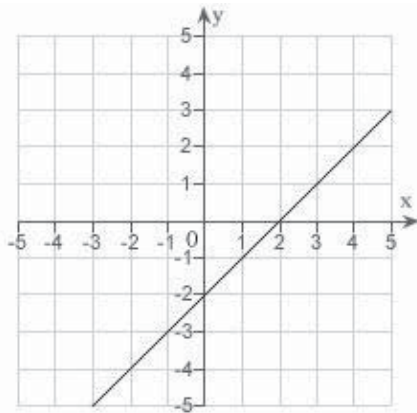
b.



e.



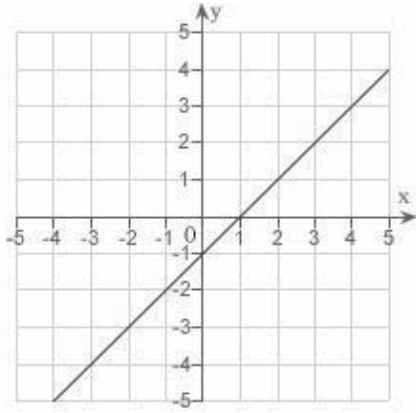
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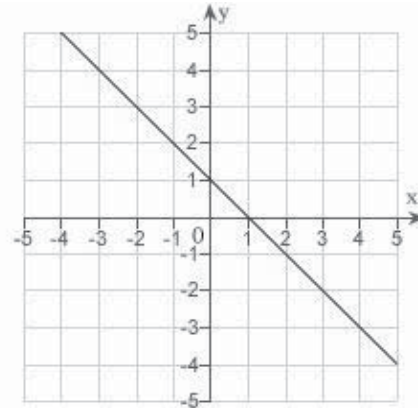
2 Chapter P: Preparation for Calculus

2. Which of the following is the correct graph of $y = x - x^3$?

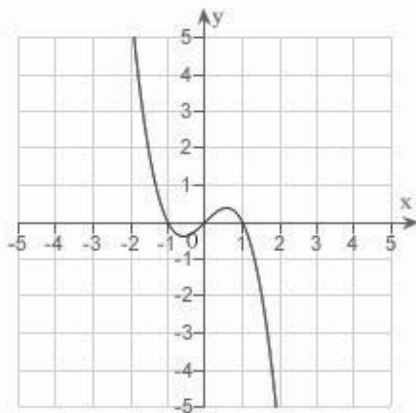
a.



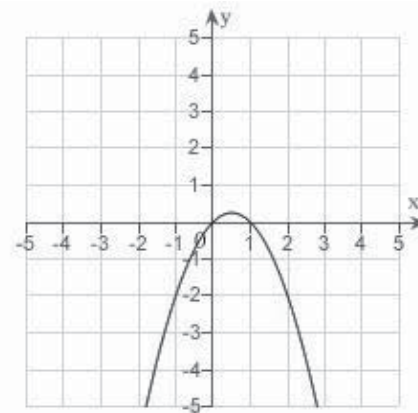
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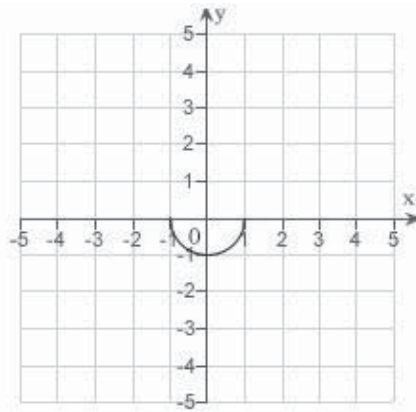
b.



e.



c.



_____ 3. Find all intercepts:

$$y = x^2 - x - 12$$

- x -intercepts: (4,0), (-3,0); y -intercepts: (0, 4), (0, 3)
- x -intercept: (12, 0); y -intercepts: (0, 4), (0, 3)
- x -intercepts: (4, 0), (-3,0); y -intercept: (0, -12)
- x -intercepts: (4, 0), (-3,0); y -intercepts: (0, -12), (0, 12)
- x -intercept: (-3, 0); y -intercept: (0, -12)

_____ 4. Find all intercepts:

$$y = (x + 5)\sqrt{4 - x^2}$$

- x -intercepts: (-5, 0), (-2, 0), (2, 0); y -intercepts: (0, 0), (0, 10)
- x -intercepts: (-5, 0), (2, 0); y -intercept: (0, 10)
- x -intercepts: (-5, 0), (2, 0); y -intercept: (0, -10)
- x -intercepts: (-5, 0), (-2, 0), (2, 0); y -intercept: (0, 10)
- x -intercepts: (-5, 0), (-2, 0), (2, 0); y -intercept: (0, -10)

_____ 5. Test for symmetry with respect to each axis and to the origin.

$$x^2y^2 = 8$$

- symmetric with respect to the origin
- symmetric with respect to the x -axis
- symmetric with respect to the y -axis
- no symmetry
- A, B, and C

_____ 6. Test for symmetry with respect to each axis and to the origin.

$$y = \frac{x^2 + 2}{x}$$

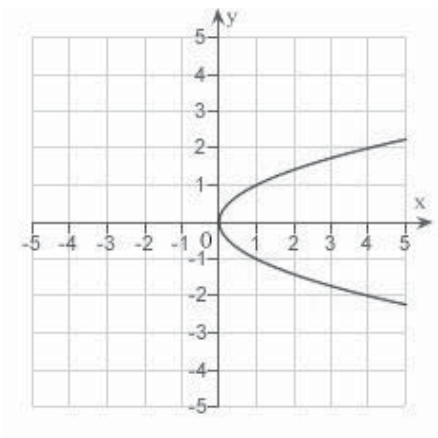
- symmetric with respect to the origin
- symmetric with respect to the y -axis
- symmetric with respect to the x -axis
- both B and C
- no symmetry

4 Chapter P: Preparation for Calculus

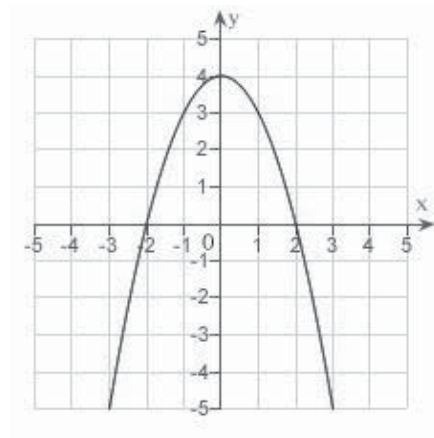
7. Sketch the graph of the equation:

$$x = 4 - y^2$$

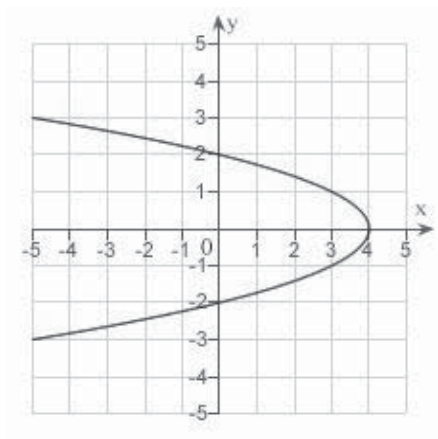
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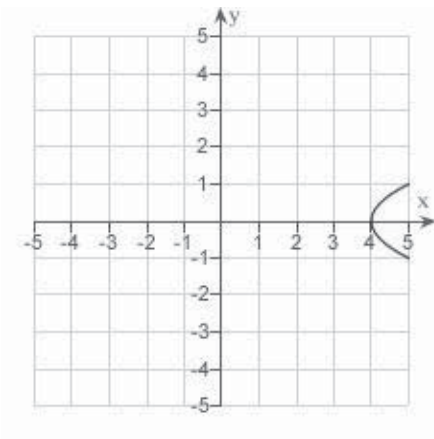
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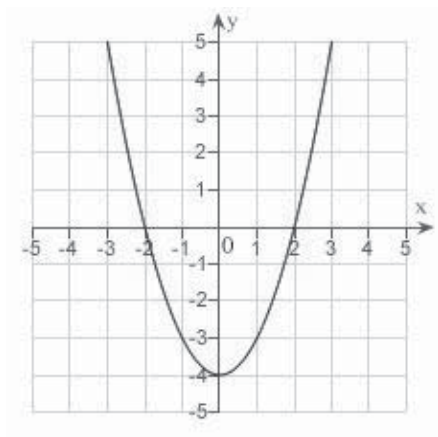
b.



e.



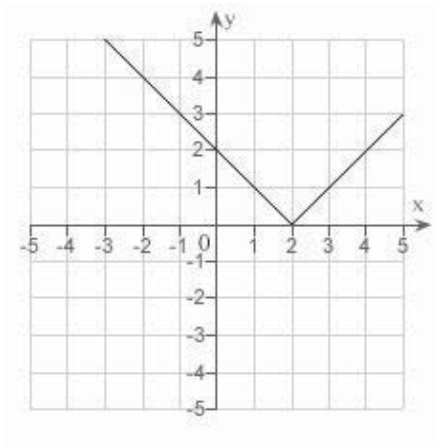
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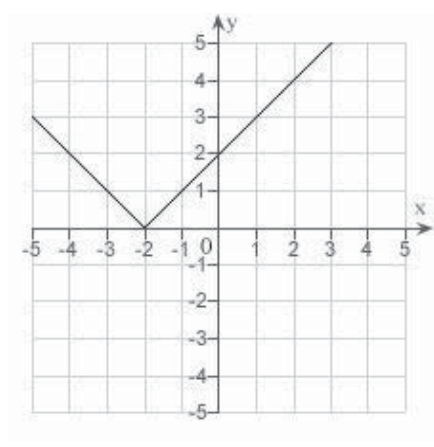
8. Sketch the graph of the equation:

$$y = |x + 2|$$

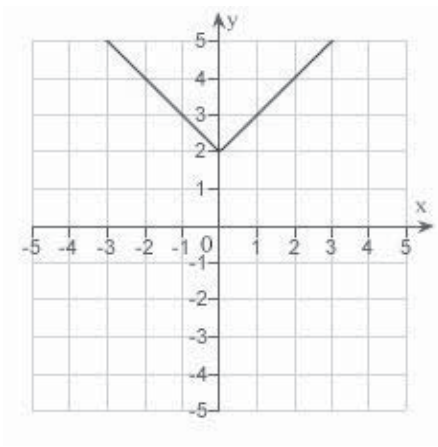
a.



d.

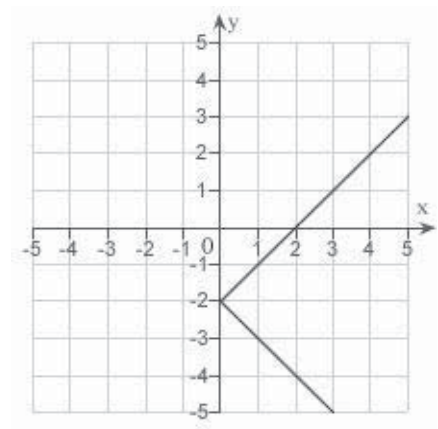


b.



e. none of the above

c.



____ 9. Find the points of intersection of the graphs of the equations:

$$x = y^2 - 3$$

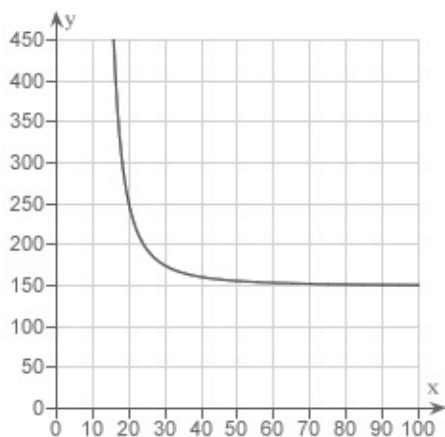
$$y = x + 1$$

- a. $(-2, 1), (-1, 2)$
- b. $(-2, 0), (1, 2)$
- c. $(-2, -1), (1, 2)$
- d. $(2, -1), (-1, 2)$
- e. $(-2, -3), (-1, 2)$

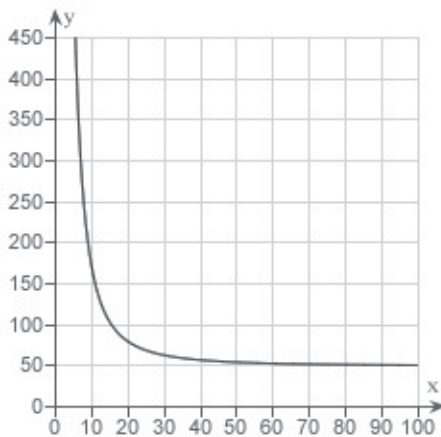
____ 10. The resistance y in ohms of 1000 feet of solid metal wire at $77^\circ F$ can be approximated by the model $y = \frac{10,000}{x^2} - 0.57$, $5 \leq x \leq 100$, where x is the diameter of the wire in

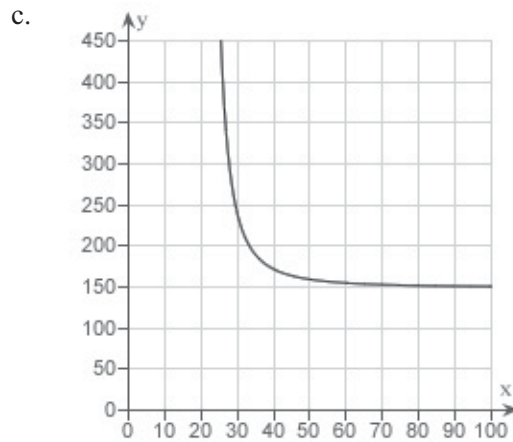
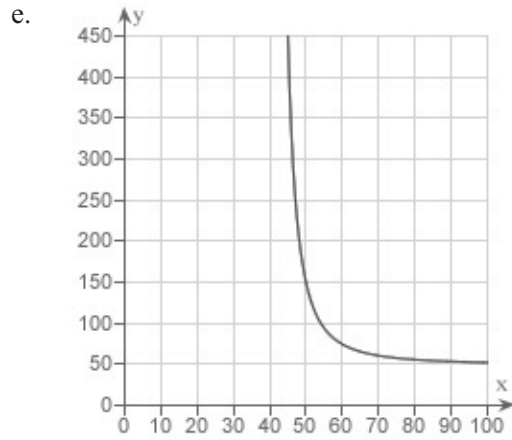
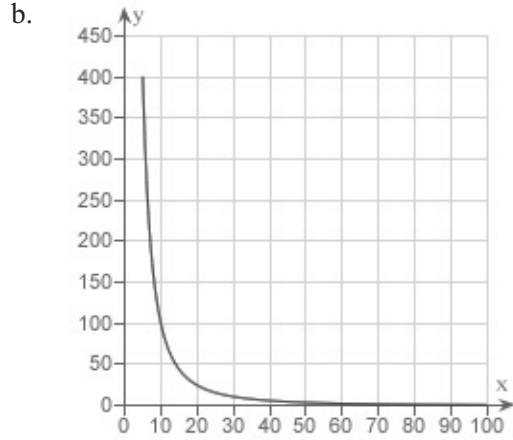
mils (0.001 in). Use a graphing utility to graph the model $y = \frac{10,000}{x^2} - 0.57$, $5 \leq x \leq 100$.

a.



d.





____ 11. The resistance y in ohms of 1000 feet of solid metal wire at 77°F can be approximated by the model $y = \frac{12,000}{x^2} - 0.46$, $5 \leq x \leq 100$, where x is the diameter of the wire in mils (0.001 in). If the diameter of the wire is doubled, the resistance is changed by approximately what factor? In determining your answer, you can ignore the constant -0.46 .

- a. $\frac{1}{2}$
- b. $\frac{1}{5}$
- c. 4
- d. 5
- e. $\frac{1}{4}$

8 Chapter P: Preparation for Calculus

_____ 12. Test for symmetry with respect to each axis and to the origin.

$$y = x^2 - 8$$

- a. symmetric with respect to the origin
- b. symmetric with respect to the y -axis
- c. symmetric with respect to the x -axis
- d. both B and C
- e. no symmetry

_____ 13. Test for symmetry with respect to each axis and to the origin.

$$|y| - x = 6$$

- a. symmetric with respect to the origin
- b. symmetric with respect to the x -axis
- c. symmetric with respect to the y -axis
- d. no symmetry
- e. A, B, and C

_____ 14. Find all intercepts:

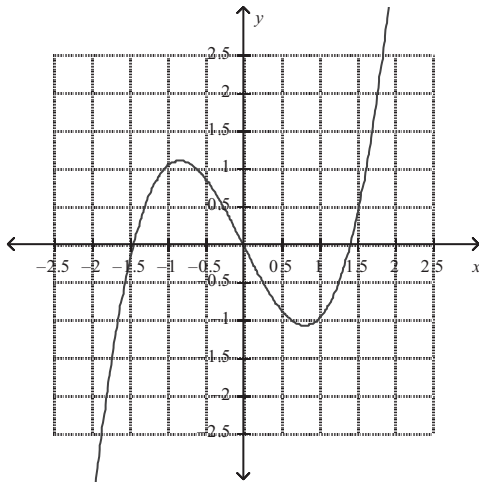
$$y^2 = x^3 - 25x$$

- a. x -intercepts: (0,0), (5,0), (-5,0); y -intercept: (0, -25)
- b. x -intercepts: (0,0), (5,0); y -intercept: (0, 0)
- c. x -intercepts: (0,0), (5,0), (-5,0); y -intercept: (0, 0)
- d. x -intercepts: (0,0), (5,0); y -intercept: (0, 5)
- e. x -intercepts: (0,0), (5,0), (25,0); y -intercept: (0, 0)

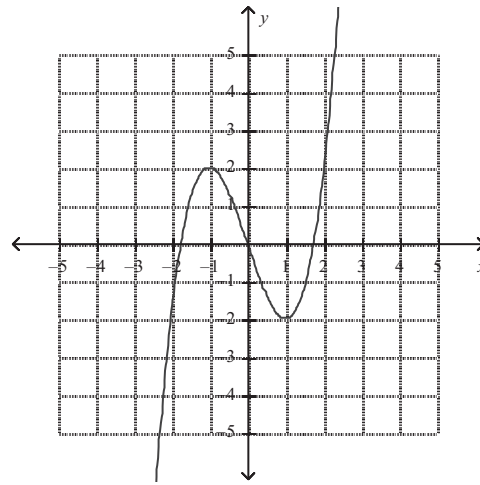
15. Sketch the graph of the equation:

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

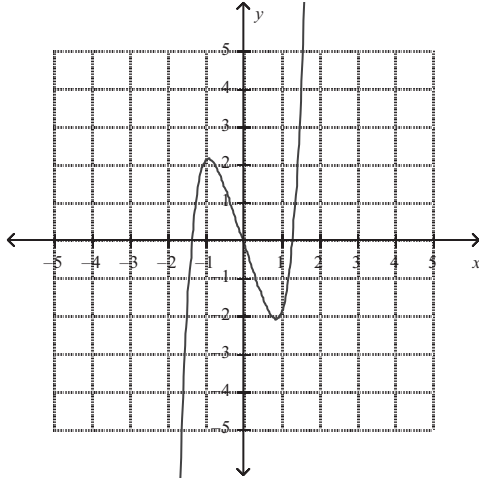
a.



d.

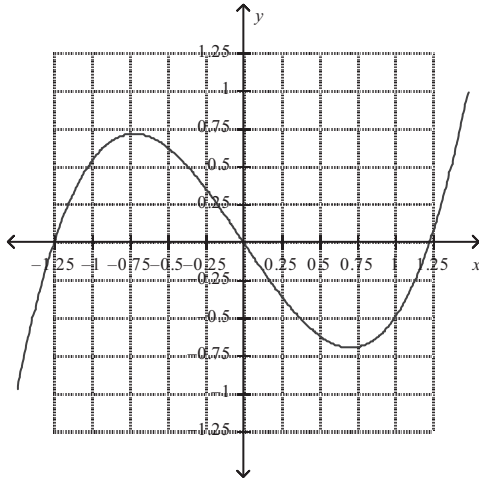


b.



e. none of the above

c.



P.1 Graphs and Models

Answer Section

MULTIPLE CHOICE

- | | | | | | | | | | |
|-----|------|--------------------------------------------------------------------|------|---|------|------|------|-------------|--|
| 1. | ANS: | B | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Identify the graph of a semicircle | | | | | MSC: | Skill | |
| 2. | ANS: | B | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Identify the graph of a cubic equation | | | | | MSC: | Skill | |
| 3. | ANS: | C | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Calculate the intercepts of an equation | | | | | MSC: | Skill | |
| 4. | ANS: | D | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Calculate the intercepts of an equation | | | | | MSC: | Skill | |
| 5. | ANS: | E | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Identify the type of symmetry of the graph of an equation | | | | | MSC: | Skill | |
| 6. | ANS: | A | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Identify the type of symmetry of the graph of an equation | | | | | MSC: | Skill | |
| 7. | ANS: | B | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Graph a quadratic equation in y | | | | | MSC: | Skill | |
| 8. | ANS: | D | PTS: | 1 | DIF: | Med | REF: | Section 0.1 | |
| | OBJ: | Graph an absolute value equation | | | | | MSC: | Skill | |
| 9. | ANS: | C | PTS: | 1 | DIF: | Med | REF: | Section 0.1 | |
| | OBJ: | Calculate the points of intersection of the graphs of equations | | | | | MSC: | Skill | |
| 10. | ANS: | B | PTS: | 1 | DIF: | Med | REF: | Section 0.1 | |
| | OBJ: | Plot a rational model using the capabilities of a graphing utility | | | | | MSC: | Application | |
| 11. | ANS: | E | PTS: | 1 | DIF: | Med | REF: | Section 0.1 | |
| | OBJ: | Interpret a rational model | | | | | MSC: | Application | |
| 12. | ANS: | B | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Identify the type of symmetry of the graph of an equation | | | | | MSC: | Skill | |
| 13. | ANS: | B | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Identify the type of symmetry of the graph of an equation | | | | | MSC: | Skill | |
| 14. | ANS: | C | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Calculate the intercepts of an equation | | | | | MSC: | Skill | |
| 15. | ANS: | D | PTS: | 1 | DIF: | Easy | REF: | Section 0.1 | |
| | OBJ: | Graph an equation in y | | | | | MSC: | Skill | |