

pg. 539 # 17-28 pg. 546 # 1-14

17. Center: $(0,0)$

x-intercepts: $(-3,0)$ $(3,0)$

y-intercepts: $(-2,0)$ $(2,0)$

domain: $-3 \leq x \leq 3$

range: $-2 \leq y \leq 2$

23. $x^2 - y^2 = 9$

↑
↑
hyperbola

opens in x direction $\sqrt{9} = 3$ x-intercept is 3

graph # 19

1. $|a| = \frac{1}{4c}$ $c = 2$

$$|a| = \frac{1}{4(2)}$$

$$|a| = \frac{1}{8}$$

c is the y-intercept,
so the parabola opens
vertically

$$y = \frac{1}{8}x^2$$

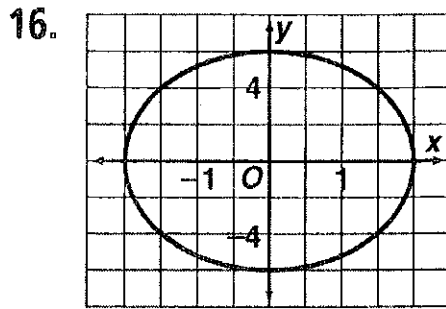
7. c is x-intercept, parabola opens horizontally
 $x = \frac{1}{24}y^2$ $a = \frac{1}{4(6)}$ $a = \frac{1}{24}$

focus is on right, parabola is positive

13. 1.5 units from vertex = c
opening upward = $+x^2$

$$|a| = \frac{1}{4c} = \frac{1}{4(1.5)} = \frac{1}{6}$$

$$y = \frac{1}{6}x^2$$



Ellipse: center $(0, 0)$, x -intercepts at ± 2 , y -intercepts at ± 6 ,
the lines of symmetry are the x - and y -axes;
domain: $-2 \leq x \leq 2$, range: $-6 \leq y \leq 6$.

17. center $(0, 0)$, x -intercepts at ± 3 , y -intercepts at ± 2 ;
domain: $-3 \leq x \leq 3$, range: $-2 \leq y \leq 2$
18. center $(0, 0)$, no x -intercepts, y -intercepts at ± 2 ; domain: all
real numbers, range: $y \leq -2$ or $y \geq 2$
19. center $(0, 0)$, x -intercepts at ± 3 , no y -intercepts;
domain: $x \leq -3$ or $x \geq 3$, range: all real numbers
20. center $(0, 0)$, x -intercepts at ± 8 , y -intercepts at ± 4 ;
domain: $-8 \leq x \leq 8$, range: $-4 \leq y \leq 4$
21. center $(0, 0)$, x -intercepts at ± 3 , y -intercepts at ± 5 ;
domain: $-3 \leq x \leq 3$, range: $-5 \leq y \leq 5$
22. center $(0, 0)$, no x -intercepts, y -intercepts at ± 3 ; domain: all
real numbers; range: $y \leq -3$ or $y \geq 3$
23. 19
24. 17
25. 18
26. 20
27. 21
28. 22

Answers for Lesson 10-2, pp. 546–548 Exercises

1. $y = \frac{1}{8}x^2$

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

3. $x = -\frac{1}{12}y^2$

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

5. $y = \frac{1}{8}x^2 + 2$

6. $x = \frac{1}{2}y^2$

7. $x = \frac{1}{24}y^2$

8. $y = -\frac{1}{16}x^2$

9. $y = \frac{1}{28}x^2$

10. $x = -\frac{1}{4}y^2$

11. $x = \frac{1}{8}y^2$

12. $y = -\frac{1}{20}x^2$

13. $y = \frac{1}{6}x^2$

14. $y = 2x^2$

15. a. Answers may vary. Sample: $y = x^2$

b. The light produced by the bulb will reflect off the parabolic mirror and will be emitted in parallel rays.

16. $(0, 1), y = -1$

17. $(0, \frac{1}{4}), y = -\frac{1}{4}$

18. $(0, -2), y = 2$

19. $(\frac{1}{2}, 0), x = -\frac{1}{2}$

20. $(0, \frac{1}{2}), y = -\frac{1}{2}$

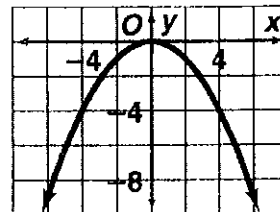
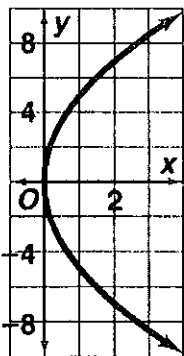
21. $(9, 0), x = -9$

22. $(-\frac{9}{2}, 0), x = \frac{9}{2}$

23. $(0, -\frac{1}{8}), y = \frac{1}{8}$

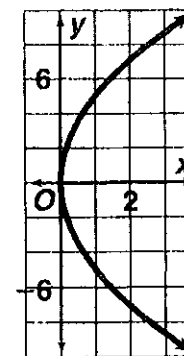
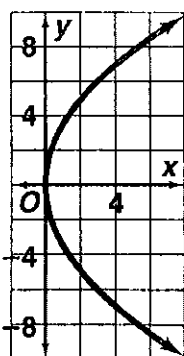
24. $(0, 0), (6, 0), x = -6$

25. $(0, 0), (0, -1), y = 1$



26. $(0, 0), (3, 0), x = -3$

27. $(0, 0), (\frac{25}{4}, 0), x = -\frac{25}{4}$



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