

pg. 546 # 16-34 even, 36-40 all, 47 & 51

16.  $a = \frac{1}{4c}$     $\frac{1}{4} = \frac{1}{4c}$     $c = 1$

opens upward, y-intercept & y = line  
focus (0,1) directrix y = -1

36.  $x = -3$  focus (3,0) opens to  $+\infty$  a is +  
 $a = \frac{1}{4(3)} = \frac{1}{12}$  opens sideways  $x = ay^2$

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

47.  $y^2 - 8y + 8x = -16$

$$y^2 - 8y + 16 = -8x - 16 + 16$$

$$(y - 4)^2 = -8x$$

$$-\frac{1}{8}(y - 4)^2 = x$$

$$a = \frac{1}{4c} \quad \frac{1}{8} = \frac{1}{4c} \quad c = 2$$

opens left      opens horizontal

shifts up

see graph paper

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

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

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

$$a = \frac{1}{4c} \quad \frac{1}{4} = \frac{1}{4c} \quad c = 1$$

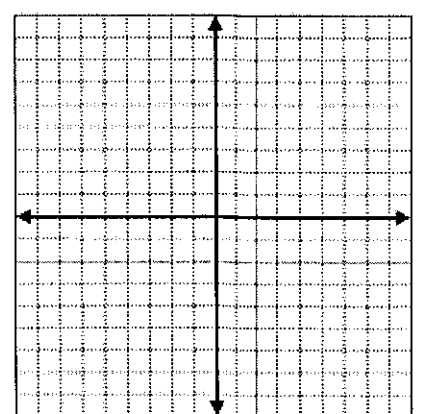
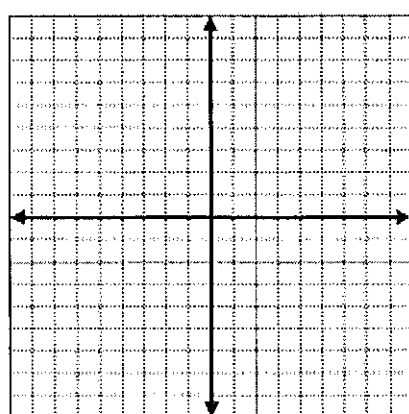
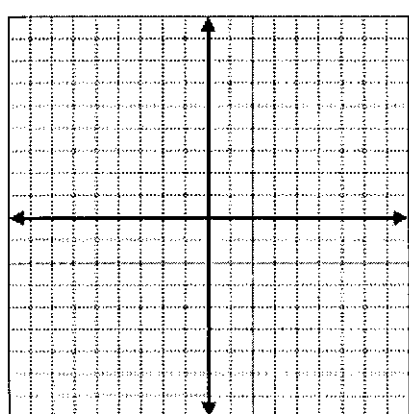
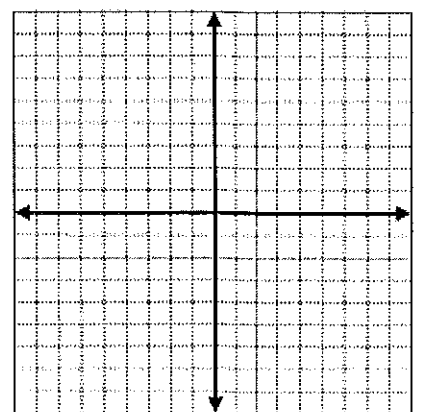
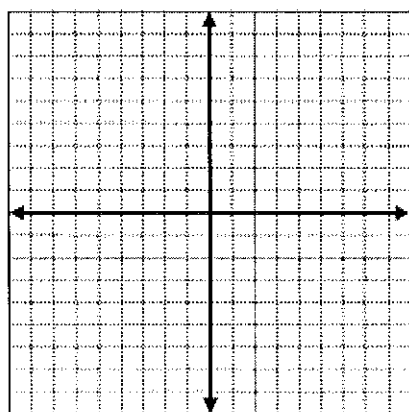
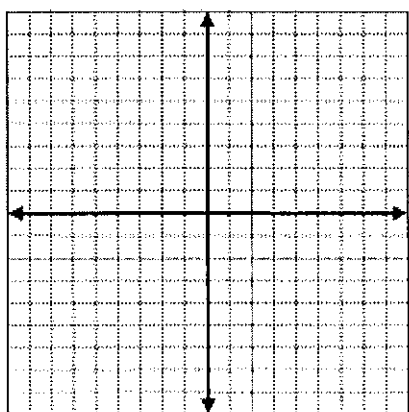
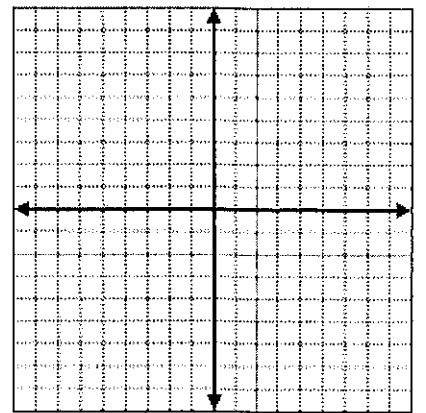
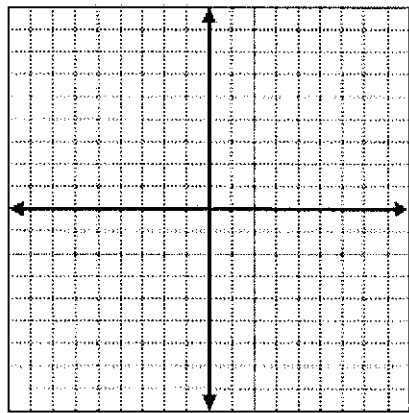
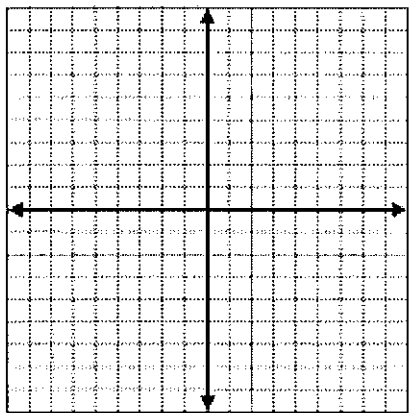
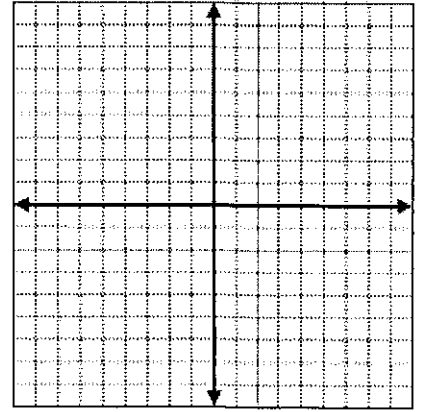
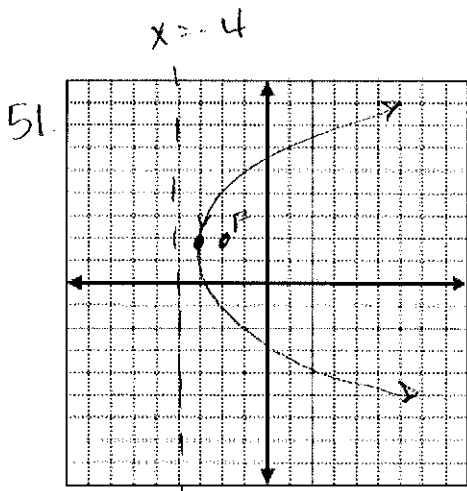
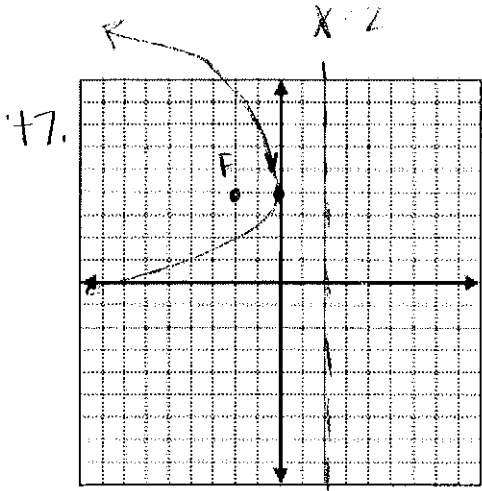
opens right      opens horizontal

shifts up

shifts left

up      left

see graph paper



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

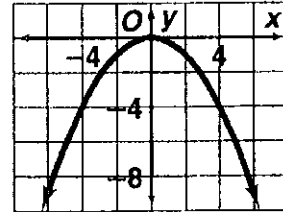
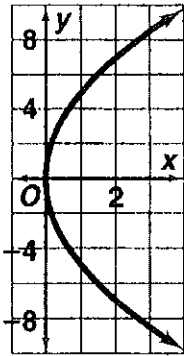
21.  $(9, 0), x = -9$

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

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

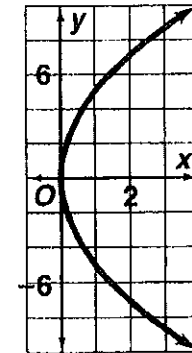
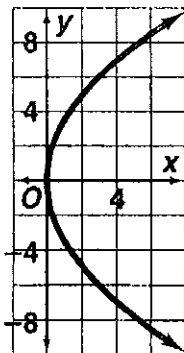
24.  $(0, 0), (6, 0), x = -6$

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



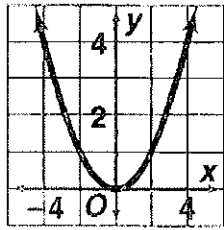
26.  $(0, 0), (3, 0), x = -3$

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

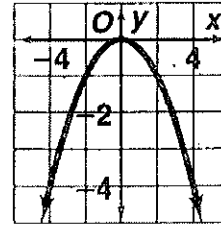


© Pearson Education, Inc. All rights reserved.

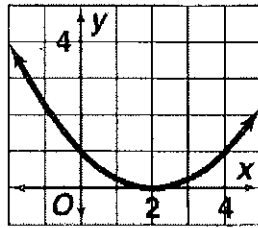
28.  $(0, 0), (0, 1), y = -1$



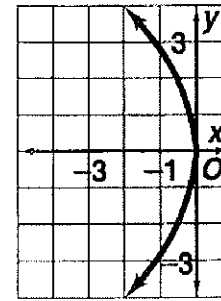
29.  $(0, 0), (0, -1), y = 1$



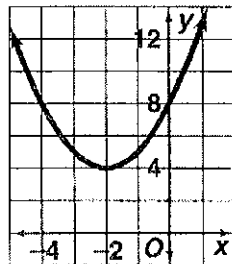
30.  $(2, 0), (2, 1), y = -1$



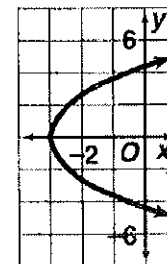
31.  $(0, 0), (-2, 0), x = 2$



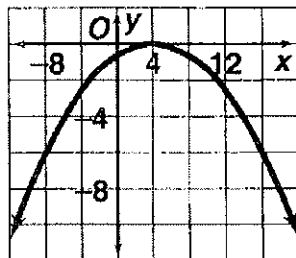
32.  $(-2, 4), (-2, \frac{17}{4}), y = \frac{15}{4}$



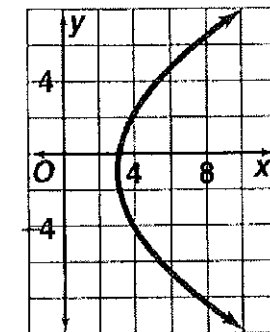
33.  $(-3, 0), (-\frac{3}{2}, 0), x = -\frac{9}{2}$



34.  $(4, 0), (4, -6), y = 6$



35.  $(3, -1), (6, -1), x = 0$



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

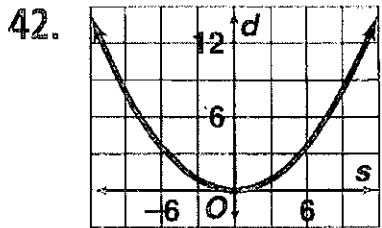
37.  $y = \frac{1}{400}x^2$

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

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

40.  $x = -\frac{1}{36}y^2$

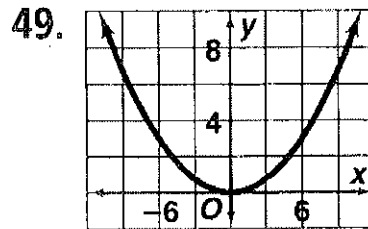
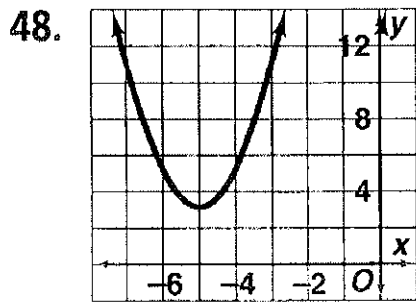
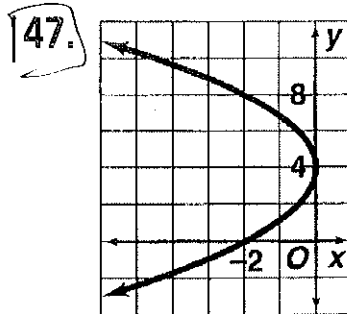
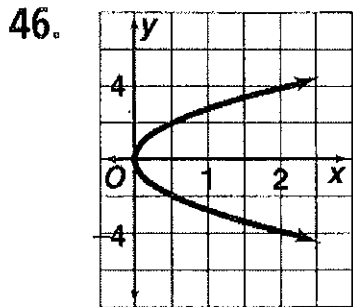
41.  $y = -\frac{5}{56}x^2$



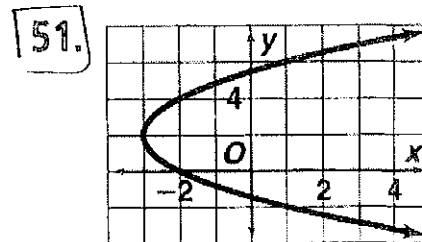
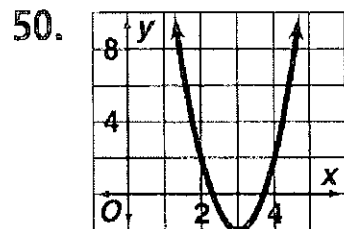
43.  $x = -\frac{1}{8}y^2$

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

45.  $x = y^2$



17



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

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

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

55. Check students' work.

56. Answers may vary. Sample: Write the equation in the form  $x = \frac{1}{4\left(\frac{1}{8}\right)}y^2$ . The distance from the focus to the directrix is  $2\left(\frac{1}{8}\right)$ , or  $\frac{1}{4}$ .