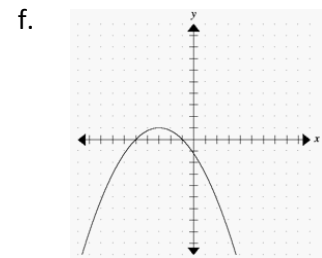
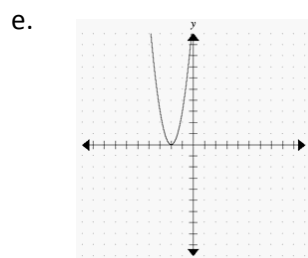
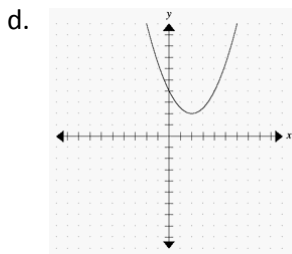
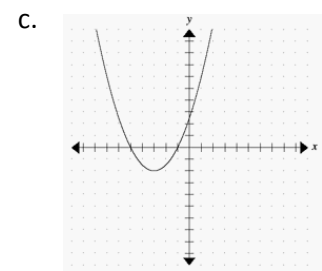
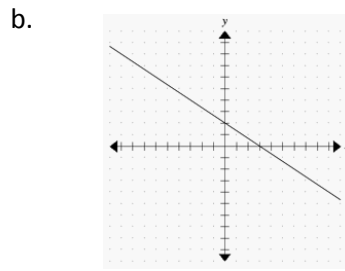
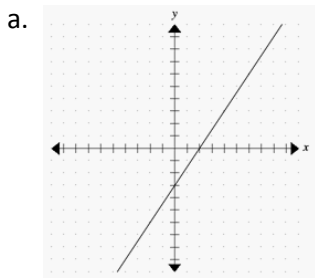


## Chapter 7 Review

1. Sketch the graph of the reciprocal function for each of the following.



2. State the equation of the asymptotes to each reciprocal function in question 1.

3. Graph each function and its reciprocal function on the same grid, then draw and label the asymptotes.

a.  $y = x^2$

b.  $y = 2x - 3$

c.  $y = -x - 4$

d.  $y = x^2 - 4$

e.  $y = (x - 3)^2$

f.  $y = x^2 + 4x + 1$

g.  $y = -x^2 - 1$

4. Solve each equation. Verify your solution graphically for question (a) and (d).

a.  $|x + 3| = 4$

b.  $|x - 5| + 3 = 3x + 4$

c.  $2|x - 8| - 1 = 13$

d.  $|2x - 4| = -x^2 + 4$

e.  $|x^2 - 3| = -2x$

f.  $|x^2 - 4x| = -5$

g.  $|x^2 - 6| = 3$

5. Graph each function. Determine the x and y-intercepts and the domain and range for each function.

a.  $y = |2x - 7|$

b.  $f(x) = \left| -\frac{2}{3}x - 7 \right|$

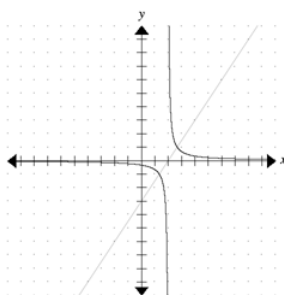
c.  $f(x) = \left| -(x + 2)^2 - 1 \right|$

d.  $y = |x^2 + 6x + 5|$

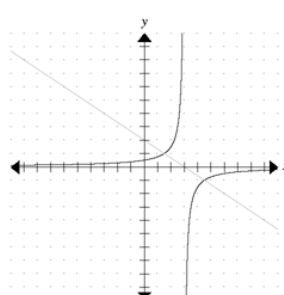
6. Complete text p. 410 # 1 - 5, 8

### Answers

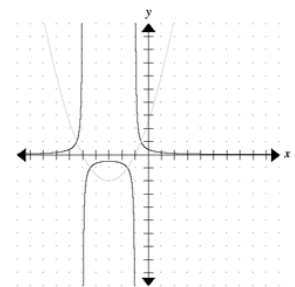
1a.

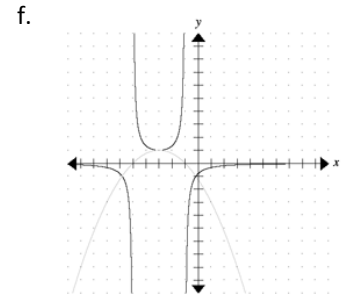
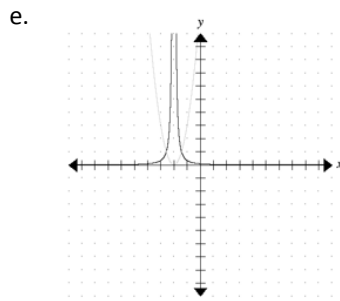
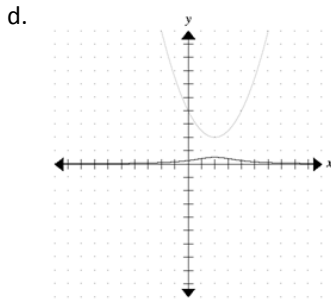


b.



c.





2a.  $x = 2, y = 0$

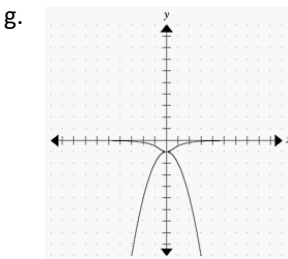
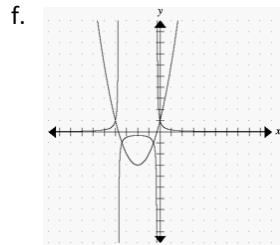
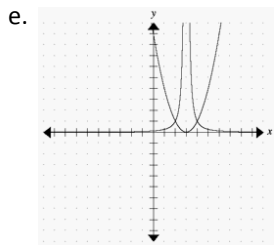
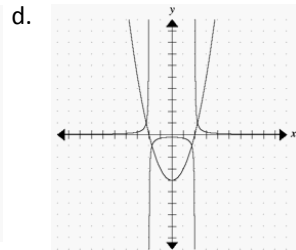
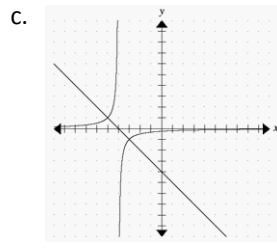
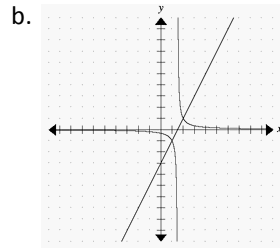
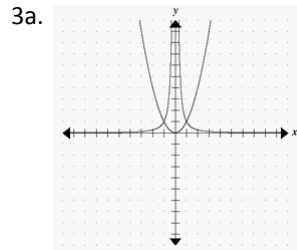
d.  $y = 0$

b.  $x = 3, y = 0$

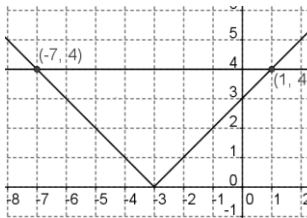
e.  $x = -2, y = 0$

c.  $x = -1, x = -5, y = 0$

f.  $x = -1, x = -5, y = 0$



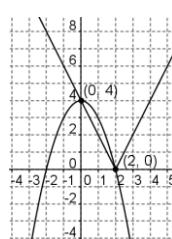
4a.  $x = -7, 1$



b.  $x = 1$

c.  $x = 1, 15$

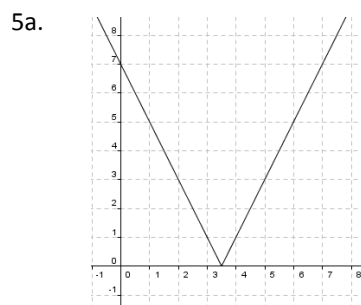
d.  $x = 0, 2$



e.  $x = -3, -1$

f. No solution

g.  $x = \pm 3, \pm \sqrt{3}$

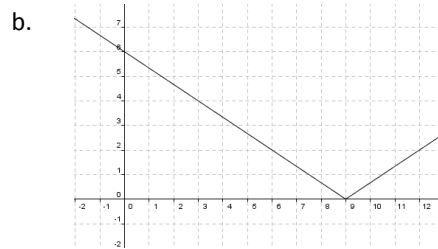


Domain:  $x \in R$

Range:  $y \geq 0$

x-int: 3.5

y-int: 7

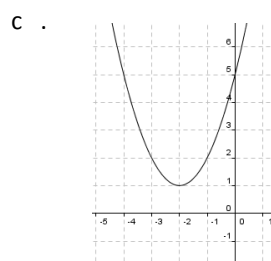


Domain:  $x \in R$

Range:  $y \geq 0$

x-int: 9

y-int: 6



Domain:  $x \in R$

Range:  $y \geq 1$

No x-intercept

y-int = 5



Domain:  $x \in R$

Range:  $y \geq 0$

x-int: -5, -1

y-int: 5