

**5-60.** Domain:  $x > 0$ ; Range:  $-\infty < y < \infty$ ;  $x$ -intercept:  $(1, 0)$ ; no  $y$ -intercept; asymptote at  $x = 0$ .

**5-62.** See below:

**5-61.** See below:

a. undefined

b.  $x \neq 7$

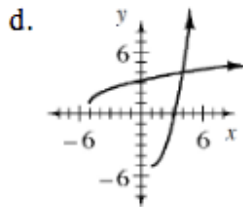
c.  $g(x) = 11$

d.  $f(g(x)) = -\frac{1}{2}$

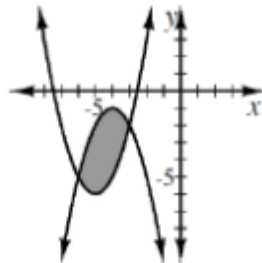
a.  $e(x) = (x - 1)^2 - 5$  for  $x \geq 1$

b. One machine undoes the other so  $e(f(-4)) = -4$ .

c. They would be reflections of each other across the line  $y = x$ .



**5-67.** The region between the two parabolas, see graph below.



**5-65.** See below:

a.  $B = 0.07(0.3x)$  or  $B = 0.021x$

b.  $S = 0.09(0.7)x$  or  $S = 0.063x$

c.  $0.084x = 5000$ ; \$59,523.81

**5-74.** See below:

a.  $x = \log_5(y)$

b.  $x = 7^y$

c.  $x = \log_8(y)$

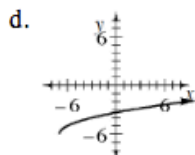
d.  $K = \log_A(C)$

e.  $C = A^K$

f.  $K = \left(\frac{1}{2}\right)^N$

**5-80. See below:**

- a. A good sketch would be a parabola opening upwards with a locator point at  $(-6, -7)$ .
- b. Shift the graph up 9 units.
- c. The graph is the same except the region below the  $x$ -axis is reflected across the axis so that the graph is entirely above the  $x$ -axis.



e.  $y = \sqrt{x+7} - 6$

**5-92. See below:**

- a. 2
- b.  $\frac{1}{x+2}$
- c.  $\frac{x-4}{(x-2)(x-1)}$
- d.  $\frac{4x+16}{x(x+2)}$

**5-97. See below:**

- a.  $x = 25$
- b.  $x = 2$
- c.  $x = 343$
- d.  $x = \sqrt{3}$
- e.  $x = 3$
- f.  $x = 4$

**5-85.**  $y = \log_7 x$

**5-98.** Less than one; Possible justifications:  $0.1 < 0.3 < 1$ ,  $\log(0.1) = -1$  and  $\log 1$  is 0 or because you would need to raise 10 to a fractional power to get a number less than 10.

**5-124. See below:**

- a.  $\frac{6x-21}{(x-4)(x+1)}$
- b.  $\frac{5+6x}{2(x-5)}$
- c.  $\frac{1}{x+1}$
- d.  $\frac{5}{x^2-9}$