

## Review Exercises (Ch. 11)

1) Answers will vary.

3)

- a) 6
- b)  $xy^2$
- c)  $x^2 - x$

5)

- a)  $\frac{2y}{3x^2}$
- b)  $\frac{x-6}{x}$
- c)  $\frac{x+3}{x-3}$
- d)  $\frac{1}{x+7}$
- e)  $-1$

7)

$x$	$Y_1 = 300 + 5x$	$Y_2 = \frac{300+5x}{x}$
0	300	ERROR
10	350	35
20	400	20
30	450	15
40	500	12.5
50	550	11

a)  $Y_2$  is undefined at  $x = 0$ .

9)

- a) Graph is shifted 3 units left.
- b) Graph is shifted 2 units down.
- c) Graph is reflected over the  $x$ -axis.
- d) Graph is stretched away from the  $x$ -axis (by a scale factor of 6).

11)

- a) Horizontal asymptote:  $x = -2$       Vertical asymptote:  $y = 0$
- b) Horizontal asymptote:  $x = 0$       Vertical asymptote:  $y = 2$
- c) Horizontal asymptote:  $x = 3$       Vertical asymptote:  $y = -3$

13)  $x = -0.67$  or  $x = 3$

15) A

17) It takes 6 minutes for the Jacuzzi to fill with the drain closed.

19) The wind speed is  $10 \frac{\text{mi}}{\text{hr}}$ .

21)

a)  $a = 36$

b)  $y = 3$

23)

a)  $a = 3$              $y = \frac{1}{2}$

b)  $a = 12$             $x = 15$

c)  $a = 90$             $y = 180$

d)  $a = 250$           $x = 107.14$

25) 122.7 sec