

LESSON
8.2

Practice

For use with pages 558-564

Find the vertical and horizontal asymptotes of the graph of the function.

1. $f(x) = \frac{4}{x-2} + 1$

V: $x=2$

H: $y=1$

2. $f(x) = \frac{2x+2}{3x-4}$

V: $3x-4=0$

$3x=4$

$x = \frac{4}{3}$

H: $y = \frac{2}{3}$

3. $f(x) = \frac{x+1}{2x-3}$

V: $2x-3=0$

$2x=3$

$x = \frac{3}{2}$

H: $y = \frac{1}{2}$

4. $f(x) = \frac{4x}{2x+3}$

V: $2x+3=0$

$2x=-3$

$x = -\frac{3}{2}$

H: $\frac{4}{2} \Rightarrow y=2$

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

V: $x-2=0$

$x=2$

H: $\frac{2}{1} \Rightarrow y=2$

6. $f(x) = \frac{6x-1}{3x+6}$

V: $3x+6=0$

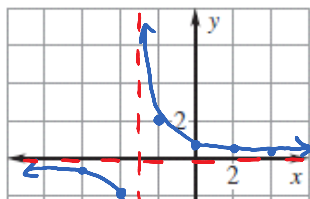
$3x=-6$

$x=-2$

H: $\frac{6}{3} \Rightarrow y=2$

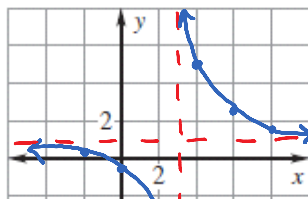
Graph the function. State the domain and range.

7. $f(x) = \frac{2}{x+3}$ V: $x=-3$
H: $y=0$



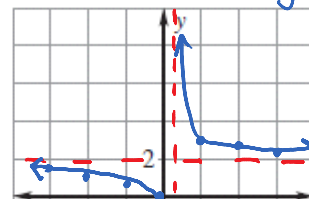
x	y
-6	-2/3
-4	-2
-2	2
0	2

8. $f(x) = \frac{x+1}{x-3}$ V: $x=3$
H: $y=1$

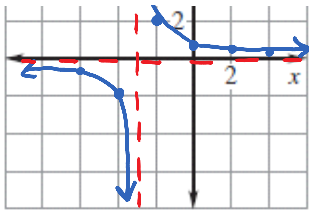


x	y
-2	1/5
0	-1/3
2	-3

9. $f(x) = \frac{4x}{2x-1}$ V: $x = \frac{1}{2}$
H: $y=2$

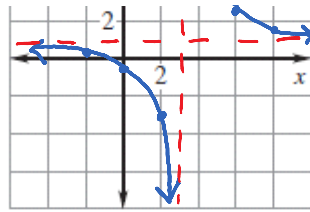


x	y
-6	24/13
-4	16/9
-2	8/5
0	0



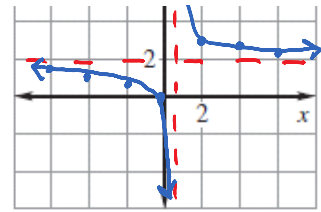
-4	-2
-2	2
0	2/3
2	2/5
4	2/7

D: $(-\infty, -3) \cup (-3, \infty)$
 R: $(-\infty, 0) \cup (0, \infty)$



D: $(-\infty, 3) \cup (3, \infty)$
 R: $(-\infty, 1) \cup (1, \infty)$

0	-1/3
2	-3
4	5
6	7/3
8	9/5



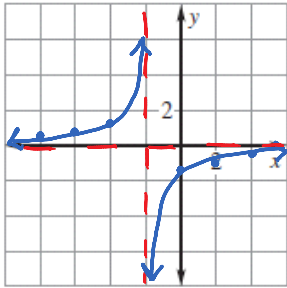
D: $(-\infty, \frac{1}{2}) \cup (\frac{1}{2}, \infty)$
 R: $(-\infty, 2) \cup (2, \infty)$

-7	10/9
-2	8/5
0	0
2	8/3
4	10/7
6	24/11

LESSON 8.2

Practice *continued*
 For use with pages 558-564

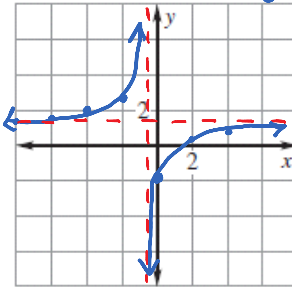
10. $f(x) = \frac{-3}{x+2}$ H: $y=0$
 V: $x=-2$



D: $(-\infty, -2) \cup (-2, \infty)$
 R: $(-\infty, 0) \cup (0, \infty)$

x	y
-8	1/2
-6	3/4
-4	3/2
0	-3/2
2	-3/4
4	-1/2

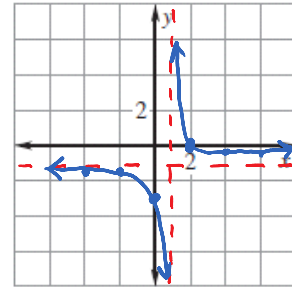
11. $f(x) = \frac{3x-2}{2x+1}$ V: $x = -\frac{1}{2}$
 H: $y = \frac{3}{2}$



D: $(-\infty, -\frac{1}{2}) \cup (-\frac{1}{2}, \infty)$
 R: $(-\infty, \frac{3}{2}) \cup (\frac{3}{2}, \infty)$

x	y
-8	26/15
-6	20/11
-4	2
-2	8/3
0	-2
2	4/5
4	10/9

12. $f(x) = \frac{4}{3x-2} - 1$ V: $x = \frac{2}{3}$
 H: $y = -1$



D: $(-\infty, \frac{2}{3}) \cup (\frac{2}{3}, \infty)$
 R: $(-\infty, -1) \cup (-1, \infty)$

x	y
-6	-6/5
-4	-9/7
-2	-3/2
0	-3
2	0
4	-3/5
6	-3/4

In Exercises 13-16, use the following information.

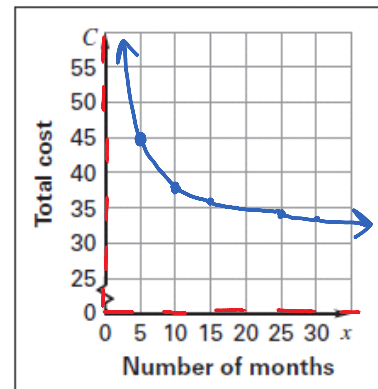
Phone Bill Your local phone company charges a \$65 installation fee and a monthly fee of \$32. Let x represent the number of months of phone service.

13. Write an equation that represents the total cost C .

$$C = 32x + 65$$

14. Write an equation that represents the average cost A per month.

$$A = \frac{32x + 65}{x}$$



15. Graph the model in Exercise 14.

x	y
5	45
10	38.5

x	y
5	45
10	38.5
15	36.33
20	35.25
25	34.6

16. How many months until the average cost per month is \$33.25?

$$33.25 = \frac{32x + 65}{x}$$

$$33.25x = 32x + 65$$

$$1.25x = 65$$

$$x = 52 \text{ months}$$