4-1 Additional Practice

Inverse Variation and the Reciprocal Function

Do the tables below represent a direct variation or an inverse variation? Explain.

1.

x	y
2	10
4	5
5	4
20	1

2.

x	y
1	6
2	12
5	30
7	42

3.

x	y
0.2	25
0.5	62.5
2	250
3	375

Suppose x and y vary inversely. Write an equation that models each inverse variation. Find y when $x = 10$.

4. $x = 7$ when $y = 2$

5. $x = 4$ when $y = 0.2$

6. $x = 2$ when $y = 5$

Graph each function. Identify the asymptotes of each graph and state the domain and the range of each function.

7. $f(x) = \frac{12}{x}$

Asymptotes:

Domain:

Range:

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

Asymptotes:

Domain:

Range:

9. The length of a pipe in a panpipe ℓ, in ft, is inversely proportional to its pitch p, in hertz. The inverse variation is modeled by the equation $p = \frac{497}{\ell}$. Find the length of pipe required to produce a pitch of 220 Hz.

10. From the table of values, how can you determine that the data do not represent an inverse variation?

x	−4	−2	2	4	6	8
y	100	100	100	50	25	20