## 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. 

| $\boldsymbol{x}$ | $\boldsymbol{y}$ |
| :--- | :--- |
| 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. $f(x)=\frac{12}{x}$
8. $f(x)=\frac{1}{x}+3$


Asymptotes:
Domain:

Range:


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?

| $\boldsymbol{x}$ | -4 | -2 | 2 | 4 | 6 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{y}$ | 100 | 100 | 100 | 50 | 25 | 20 |

