Name_____ Class_____ Date _____

8-1   **Practice**

The Reciprocal Function Family

Graph each function. Identify the *x*- and *y*-intercepts and the asymptotes of the graph. Also, state the domain and the range of the function.

1. $y = \dfrac{12}{x}$

2. $y = \dfrac{5}{x}$

3. $y = -\dfrac{4}{x}$

4. $y = \dfrac{1}{x} + 3$

5. $y = \dfrac{3}{4x} + \dfrac{1}{2}$

6. $y = \dfrac{3}{x-1} + 2$

Graph each pair of functions. Find the approximate point(s) of intersection.

7. $y = \dfrac{3}{x-4}; y = 2$

8. $y = \dfrac{2}{x+5}; y = -1.5$

Write the function $y = \dfrac{a}{x}$ **using the given value of *a*. Then identify the effect of *a* on the graph.**

9. $a = 3$

10. $a = -5$

11. $a = 0.4$

8-1

Practice (continued)

The Reciprocal Function Family

Write an equation for the translation of $y = -\dfrac{3}{x}$ **that has the given asymptotes.**

12. $x = -1;\ y = 3$ 　　　　　**13.** $x = 4;\ y = -2$ 　　　　　**14.** $x = 0;\ y = 6$

15. The junior class is buying keepsakes for Class Night. The price of each keepsake p is inversely proportional to the number of keepsakes s bought. The keepsake company also offers 10 free keepsakes in addition to the class's order. The equation $p = \dfrac{1800}{s+10}$ models this inverse variation.

  a. If the class buys 240 keepsakes, what is the price for each one?

  b. If the class pays $5.55 for each keepsake, how many can they get, including the free keepsakes?

  c. If the class buys 400 keepsakes, what is the price for each one?

  d. If the class buys 50 keepsakes, what is the price for each one?