Name: **Date:**

Practice: Graphing Rational Functions and Identifying Key Features A

For problems 1–3, find the horizontal and vertical asymptotes of each rational function. Round to the nearest tenth, if necessary.

1. $f(x)=\dfrac{9x^2-2}{x+4}$
2. $f(x)=\dfrac{5x+1}{2x^2-8}$
3. $f(x)=\dfrac{5x+2}{x}$

For problems 4 and 5, find the zero(s) and *y*-intercept(s) of each rational function. Write each as a set of coordinates and round to the nearest tenth if necessary.

4. $f(x)=\dfrac{x^2-4x-5}{6x-2}$
5. $f(x)=\dfrac{5x+14}{x^2-7}$

For problems 6–9, graph each rational function.

6. $f(x)=\dfrac{2x+7}{x-1}$
7. $f(x)=\dfrac{x^2-6x+8}{x}$
8. $f(x)=\dfrac{3x}{x^2-4}$
9. $f(x)=\dfrac{6x+9}{2x-5}$

For problem 10, create a graph that represents the given situation.

10. The average cost per unit for a factory to produce an MP3 player depends on how many units are produced. The relationship can be modeled by the function $f(x)=\dfrac{1000}{x+20}$, in which x is the number of units produced and $f(x)$ is the cost per unit.