Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Advanced Algebra

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_ Spring BM 1 Review

**Find the characteristics listed for each rational function. Graph using an x/y table.**

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

Vertical Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_ Vertical Asymptote:\_\_\_\_\_\_\_\_\_\_\_

Horizontal Asymptote:\_\_\_\_\_\_\_\_\_\_\_ Horizontal Asymptote:\_\_\_\_\_\_\_\_\_\_

Domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 

**For problems 3-5, write a rational function given the characteristics.**

3) zeros at -1 & 3, vertical asymptote at x=0 & x=2

4) zeros at 0 & 7, vertical asymptote at x=-2

5) zero at -3, vertical asymptote at x=1, hole at x=9

**Find the characteristics listed for each rational function. Graph using a graphing calculator.**

6) $f\left(x\right)=\frac{4x+12}{x^{2}-3x-18}$ 7) $f\left(x\right)=\frac{2x^{2}+2x-12}{x^{2}-9}$

Hole(s):\_\_\_\_\_\_\_\_\_\_\_\_ Hole(s):\_\_\_\_\_\_\_\_\_\_\_

Zero(s):\_\_\_\_\_\_\_\_\_\_\_\_ Zero(s):\_\_\_\_\_\_\_\_\_\_\_

Vertical Asymptote(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vertical Asymptote(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Horizontal Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_ Horizontal Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Slant Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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8) $f\left(x\right)=\frac{x^{2}-3x-4}{x-4}$ 9) $f\left(x\right)=\frac{x^{2}+2x-8}{x-1}$

Hole(s):\_\_\_\_\_\_\_\_\_\_\_\_ Hole(s):\_\_\_\_\_\_\_\_\_\_\_

Zero(s):\_\_\_\_\_\_\_\_\_\_\_\_ Zero(s):\_\_\_\_\_\_\_\_\_\_\_

Vertical Asymptote(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vertical Asymptote(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Horizontal Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_ Horizontal Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Slant Asymptote:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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