1.8 Rational Functions and Zeros

AP Precalculus Name: _____ **CA #1**

Find the zeros of the following rational functions if one exists.

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

2. $g(x) = \dfrac{x^2+3x}{x^2-4x-21}$

3. $h(t) = \dfrac{t^2-3t+2}{t-2}$

Use the rational functions to answer the following. NO CALCULATOR

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

a. Domain:

b. Zero(s):

c. Horizontal Asymptote:

d. y-intercept:

e. Where is $f(x) > 0$?

5. $d(t) = \dfrac{t^2-1}{t+3}$

a. Domain:

b. Zero(s):

c. Horizontal Asymptote:

d. y-intercept:

e. Where is $f(x) < 0$?

6. $r(x) = \dfrac{2x-12}{x^2-3x-18}$

a. Domain:

b. Zero(s):

c. Horizontal Asymptote:

d. y-intercept:

e. Where is $f(x) > 0$?

Answers to 1.8 CA #1

1. $x = -2$	2. $x = 0$	3. $t = 1$
4. a. $(-\infty,-3) \cup (-3,0) \cup (0,\infty)$ b. $x = -5$ c. $y = 1$ d. none e. $(-\infty,-5) \cup (0,\infty)$	5. a. $(-\infty,-3) \cup (-3,\infty)$ b. $x = -1$ and $x = 1$ c. none d. $\left(0,-\frac{1}{3}\right)$ e. $(-\infty,-3) \cup (-1,1)$	6. a. $(-\infty,-3) \cup (-3,6) \cup (6,\infty)$ b. none c. $y = 0$ d. $\left(0,\frac{2}{3}\right)$ e. $(-3,6) \cup (6,\infty)$

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