

READ AND FOLLOW ALL DIRECTIONS. CIRCLE YOUR FINAL ANSWERS.
SHOW ALL WORK TO RECEIVE FULL CREDIT. NO CALCULATORS.

1. (5 points) Let $F(x) = \frac{5x^2}{5-x}$
 - (a) Identify the domain of $F(x)$.

 - (b) Circle the correct option:

 $F(x)$ (is / is not) in lowest terms.

 $F(x)$ is a (proper / improper) rational function.

 - (c) List the vertical asymptote(s) of $F(x)$.

2. (5 points) Let $G(x) = \frac{6}{(x+3)(4-x)}$
 - (a) Identify the domain of $G(x)$.

 - (b) Circle the correct option:

 $G(x)$ (is / is not) in lowest terms.

 $G(x)$ is a (proper / improper) rational function.

 - (c) List the horizontal asymptote(s) of $G(x)$.

Quiz #7

3. (10 points) Let $H(x) = \frac{x^3}{x^2 - 5x + 6}$

(a) Identify the domain of $H(x)$.

(b) Circle the correct option:

$H(x)$ (is / is not) in lowest terms.

$H(x)$ is a (proper / improper) rational function.

(c) Determine the horizontal and/or oblique asymptote(s) of $H(x)$. Be sure to show your work. (Hint: You *will* need polynomial long division or synthetic division.)

4. (2 points) EXTRA CREDIT. List the possible rational zeros of the polynomial $f(x) = 2x^6 + 3x^5 + 5x^4 + 7x^3 + 11x^2 + x + 13$.