

NAME: _____ Score _____/10

Please **print** your name**No Decimals No mixed numbers No complex fractions No boxed or circled answers**

1. T F The graph of a rational function is a smooth continuous graph with no sharp corners.
2. T F Every rational function has a vertical asymptote.
3. T F Every rational function has a horizontal asymptote.
4. T F The graph of a rational function can cross its horizontal asymptote.
5. T F The graph of a rational function can cross its vertical asymptotes.
6. T F A rational function can have more than one vertical asymptotes.
7. T F A rational function can have more than one horizontal asymptote.
8. T F If f is a rational function with domain elements a and b such that $a < b$ and $f(a) \neq f(b)$, the graph of f must have an x -intercept between a and b .
9. T F If the numerator and the denominator in the rule for a rational function f have the same degree, then the x -axis is the horizontal asymptote for that function f .
10. T F The zeros of a rational function are the zeros of the numerator which are not zeros of the denominator.

Remember: Asymptotes are lines!11. Consider the function f whose rule is $f(x) = \frac{x + 2}{x - 5}$

- a. What is the domain of f ? _____
- b. What are the zeros of f ? _____
- c. What are the vertical asymptotes of f ? _____
- d. What is the horizontal asymptote of f ? _____
- e. Calculate $f(7)$. _____