

# Honors 1

Name: \_\_\_\_\_

## Chapter 11 Practice TEST – Use a separate piece of paper if necessary.

1. If $y = 4$ when $x = 1$ , a) write the inverse variation equation.       b) find the value of $x$ when $y = 10$ .	2. Identify the asymptotes of $y = \frac{-4}{x+7} - 2$ .  Vertical Asymptote: _____  Horizontal Asymptote: _____	3. Identify the asymptotes of $y = \frac{4}{3x-15} + 1$ .  Vertical Asymptote: _____  Horizontal Asymptote: _____
4. Describe in words how the graph of $g(x)$ would compare to $f(x)$ . $g(x) = \frac{1}{x + 5/2} - 2$  $f(x) = \frac{1}{x}$	5. Speed and distance are inversely proportional. If a trip takes 3.5 hours going 60 mph, how long will it take going 70 mph?	6. Sketch a graph that has an a) inverse relationship       b) direct relationship.

7. Simplify $\frac{k^2 + 2k - 15}{k^2 - 4k + 3}$ . State the excluded values.       Simplified Form:   Excluded value(s): _____	8. Simplify and state the x-intercept(s). $f(x) = \frac{x^2 + 9x + 18}{(x + 6)}$      Simplified Form:   x-intercept(s): _____
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Find each product or quotient (factor first).

9.  $\frac{r^2 + 2r - 3}{r^2 + 5r + 6} \cdot \frac{r + 2}{r^2 - 1}$

10.  $\frac{\frac{3x + 3}{5x^2 - 5x - 10}}{\frac{x - 2}{15}}$

Simplify each expression.

11. Divide by long division.  
 $(4x^2 + 17x + 1) \div (4x + 1)$

12.  $\frac{4t - 5}{t + 6} + \frac{5t + 3}{t + 6}$

13.  $\frac{3v - 6}{v^2 - 4v + 4} + \frac{1}{v - 2}$

14.  $\frac{5n}{5n - 4} + \frac{2n - 3}{4 - 5n}$

15. Given the formula  $\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$  for the resistance of a circuit, determine the resistance  $R_3$  if  $R_T = 4$  ohms,  $R_1 = 6$  ohms, and  $R_2 = 3$  ohms.