Algebra 2 Name_____ ID: 1

Rational Expressions Quiz Review

Date_____ Period____

Simplify each expression.

1) $\frac{9r^2}{12r}$ $\frac{3r}{4}$

2) $\frac{20v}{16v^2}$ $\frac{5}{4v}$

3) $\frac{3p-12}{p-4}$ $\frac{3(p-4)}{p-4} = 3$

4) $\frac{4x}{4x^2-8x} = \frac{4x}{4x(x-2)}$ $\frac{1}{x-2}$

5) $\frac{k-1}{5k^2-5} = \frac{K-1}{5(K^2-1)} = \frac{K-1}{5(K+1)(K-1)}$ $\frac{1}{5(K+1)}$

6) $\frac{15n-3}{6n} = \frac{3(5n-1)}{6}$ $\frac{5n-1}{2}$

7) $\frac{5r^2-10r-15}{2r^2-10r+12} = \frac{5(r^2-2r-3)}{2(r^2-5r+6)}$ $\frac{5(r-3)(r+1)}{2(r-3)(r-2)} = \frac{5(r+1)}{2(r-2)}$

8) $\frac{2x^2-12x+16}{2x^2-10x+8} = \frac{2(x^2-6x+8)}{2(x^2-5x+4)}$ $\frac{(x-4)(x-2)}{(x-4)(x-1)} = \frac{x-2}{x-1}$

9) $\frac{5x^2+29x+20}{4x+20} = \frac{(5x+4)(x+5)}{4(x+5)}$ $\frac{5x+4}{4}$

10) $\frac{2b^2-6b+4}{3b^2-11b+10}$ $\frac{2(b^2-3b+2)}{(3b-5)(b-2)}$ $\frac{2(b-2)(b-1)}{(3b-5)(b-2)} = \frac{2(b-1)}{3b-5}$

11) $\frac{1}{a+4} \cdot \frac{7a+28}{a+7}$

$7(a+4)$

$\frac{7}{a+7}$

12) $\frac{x+5}{3x^2} \cdot \frac{9x^3+24x^2}{6x+16}$

$3x^2(3x+8)$

$2(3x+8)$

$\frac{x+5}{2}$

13) $\frac{1}{5x} \cdot \frac{6x^3-48x^2}{6x^2}$

$\frac{1}{5x} \cdot \frac{6x^2(x-8)}{6x^2}$

$\frac{x-8}{5x}$

14) $\frac{b^2-2b-35}{b^2-10b+21} \cdot \frac{8b-24}{8b-48}$

$\frac{(b-7)(b+5)}{(b-7)(b-3)} \cdot \frac{8(b-3)}{8(b-6)}$

$\frac{b+5}{b-6}$

15) $\frac{3x+6}{3x-9} \cdot \frac{x-3}{x^2+5x+4}$

$\frac{3(x+2)}{3(x-3)} \cdot \frac{x-3}{(x+4)(x+1)} = \frac{x+2}{(x+4)(x+1)}$

16) $\frac{3x^2-19x+28}{3x-3} \div \frac{24x-56}{3x-3}$

$\frac{(3x-7)(x-4)}{(3x-3)} \cdot \frac{(3x-3)}{8(3x-7)}$

$\frac{x-4}{8}$

17) $\frac{1}{2n-3} \div \frac{n+8}{2n^2+3n-9}$

$\frac{1}{2n-3} \cdot \frac{(2n-3)(n+3)}{n+8}$

$\frac{n+3}{n+8}$

18) $(14a-6) \div \frac{14a-6}{4a^2+20a}$

$(14a-6) \cdot \frac{4a(a+5)}{14a-6}$

$4a(a+5)$

19) $\frac{12}{2-5n} \div \frac{49n-56}{35n^2-54n+16}$

Rearrange $-5n+2 \rightarrow -2+5n$ & Factor out $a-1$

$\frac{12}{-2+5n} \cdot \frac{(7n-8)(5n-2)}{7(7n-8)}$

$(-1)(5n-2)$

$\frac{12}{-7}$

20) $\frac{8}{4n+8} \div \frac{18n^2-12n}{12n-8}$

$\frac{8}{4(n+2)} \cdot \frac{4(3n-2)}{6n(3n-2)}$

$\frac{4}{3n(n+2)}$