Algebra 2 CC Name_____

Unit 3: Rational Operations (Wks #1)

Date_____ Period____

Simplify each expression.

1) $\frac{4}{k-1} - \frac{2k}{k-6}$

2) $\frac{5n}{2n^2-10n} + \frac{5n}{3n}$

3) $\frac{3a}{3} - \frac{a+6}{2a^2-6a}$

4) $\frac{x-6}{x-5} + \frac{2x}{3x}$

5) $\frac{4}{5n+1} + \frac{5}{n+6}$

6) $\frac{6}{p^2-3p+2} - 6$

7) $\frac{6}{3} - \frac{5m}{3m-12}$

8) $\frac{x+2}{9x^2-15x} + \frac{5}{2}$

9) $\frac{9}{x+7} \div \frac{45x+18}{30x^2+12x}$

10) $\frac{18p^2-6p^3}{p^2-12p+27} \div \frac{p-1}{p-9}$

11) $\frac{n-8}{10n^2-80n} \div \frac{1}{n-8}$

12) $\frac{3b}{6} \div \frac{3b}{b^2-64}$

13) $\frac{4x^2}{8} \div \frac{5x-15}{x-3}$

14) $\frac{r+5}{3r^2} \div \frac{1}{3r^3+3r^2}$

15) $\frac{8a^2-40a}{10a^2-50a} \div \frac{9}{5a}$

16) $\frac{n^2-4n-5}{n^2-3n-4} \div \frac{n-5}{9n^2}$

17) $\frac{7}{x+5} \div \frac{8x-72}{8x+40}$

18) $\frac{v^2-16v+63}{v-9} \div \frac{5v}{3v}$

Solve each equation. Remember to check for extraneous solutions.

19) $\frac{1}{4n^2} - \frac{n+3}{2n^2} = \frac{1}{4n}$

20) $\frac{x-6}{2x} + \frac{2}{x} = 1$

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Simplify each expression.

1) $\frac{4}{k-1} - \frac{2k}{k-6}$ $\frac{6k-24-2k^2}{(k-1)(k-6)}$

2) $\frac{5n}{2n^2-10n} + \frac{5n}{3n}$ $\frac{-35+10n}{6(n-5)}$

3) $\frac{3a}{3} - \frac{a+6}{2a^2-6a}$ $\frac{2a^3-6a^2-a-6}{2a(a-3)}$

4) $\frac{x-6}{x-5} + \frac{2x}{3x}$ $\frac{5x-28}{3(x-5)}$

5) $\frac{4}{5n+1} + \frac{5}{n+6}$ $\frac{29n+29}{(5n+1)(n+6)}$

6) $\frac{6}{p^2-3p+2} - 6$ $\frac{-6p^2+18p-6}{(p-1)(p-2)}$

7) $\frac{6}{3} - \frac{5m}{3m-12}$ $\frac{m-24}{3(m-4)}$

8) $\frac{x+2}{9x^2-15x} + \frac{5}{2}$ $\frac{-73x+4+45x^2}{6x(3x-5)}$

9) $\frac{9}{x+7} \div \frac{45x+18}{30x^2+12x}$ $\frac{6x}{x+7}$

10) $\frac{18p^2-6p^3}{p^2-12p+27} \div \frac{p-1}{p-9}$ $-\frac{6p^2}{p-1}$

11) $\frac{n-8}{10n^2-80n} \div \frac{1}{n-8}$ $\frac{n-8}{10n}$

12) $\frac{3b}{6} \div \frac{3b}{b^2-64}$ $\frac{(b+8)(b-8)}{6}$

13) $\frac{4x^2}{8} \div \frac{5x-15}{x-3}$ $\frac{x^2}{10}$

14) $\frac{r+5}{3r^2} \div \frac{1}{3r^3+3r^2}$ $(r+5)(r+1)$

15) $\frac{8a^2-40a}{10a^2-50a} \div \frac{9}{5a}$ $\frac{4a}{9}$

16) $\frac{n^2-4n-5}{n^2-3n-4} \div \frac{n-5}{9n^2}$ $\frac{9n^2}{n-4}$

17) $\frac{7}{x+5} \div \frac{8x-72}{8x+40}$ $\frac{7}{x-9}$

18) $\frac{v^2-16v+63}{v-9} \div \frac{5v}{3v}$ $\frac{3(v-7)}{5}$

Solve each equation. Remember to check for extraneous solutions.

19) $\frac{1}{4n^2} - \frac{n+3}{2n^2} = \frac{1}{4n}$ $\left\{-\frac{5}{3}\right\}$

20) $\frac{x-6}{2x} + \frac{2}{x} = 1$ $\{-2\}$