

Multiplying Rational Expressions

Date _____ Period _____

Simplify each expression.

1) $\frac{59n}{99} \cdot \frac{80}{33n}$

2) $\frac{53}{43} \cdot \frac{46n^2}{31}$

5) $\frac{96}{38n} \cdot \frac{25}{45}$

6) $\frac{84}{3} \cdot \frac{48x}{95}$

9) $\frac{2(p+6)}{4} \cdot \frac{p-3}{2(p-3)}$

10) $\frac{9(r+4)}{r+4} \cdot \frac{9r}{9(r-5)}$

13) $\frac{1}{v+10} \cdot \frac{10v+30}{v+3}$

$$15) \frac{x+7}{7x+35} \cdot \frac{x^2-3x-40}{x-8}$$

$$16) \frac{20a^2-100a}{a-1} \cdot \frac{1}{16a^3-80a^2}$$

$$19) \frac{21x^2-21x}{18x^2-18x} \cdot \frac{6x}{6x^2}$$

$$20) \frac{1}{p-9} \cdot \frac{p^2+6p-27}{p+9}$$

$$23) \frac{x^2-10x+25}{10x-100} \cdot \frac{x-10}{45-9x}$$

$$24) \frac{45x^2}{x-9} \cdot \frac{x^2-5x-36}{3x^3+12x^2}$$

$$27) \frac{m+1}{3m-15} \cdot \frac{8m-80}{m^2-9m-10}$$

Dividing Rational Expressions

Date _____ Period _____

Simplify each expression.

1) $\frac{10n}{9} \div \frac{13n^2}{16}$

2) $\frac{16n}{17} \div \frac{8n}{6}$

5) $\frac{7}{18} \div \frac{6}{9a}$

6) $\frac{5}{20} \div \frac{5x}{3}$

9) $\frac{7a^2}{7a^3 + 56a^2} \div \frac{2}{a^2 + 7a - 8}$

$$11) \frac{x^2 + 10x + 16}{x^2 + 6x + 8} \div \frac{1}{x + 4}$$

$$12) \frac{49x + 21}{6x} \div \frac{42x + 18}{6}$$

$$15) \frac{8}{4n^2 - 16n} \div \frac{1}{n - 4}$$

$$16) \frac{a - 4}{a^2 - 2a - 8} \div \frac{1}{a - 5}$$

$$19) \frac{16x - 56}{8} \div \frac{8x - 28}{4}$$

$$20) \frac{10x^2 - 28x + 16}{2x - 4} \div \frac{25x^2 - 25x + 4}{5x^2 - 41x + 8}$$

Adding + Subtracting Rational Expressions

Date_____ Period____

Simplify each expression.

1) $\frac{u+5v}{8v^2u^2} - \frac{u-6v}{8v^2u^2}$

2) $\frac{5n}{30m} + \frac{2m+4n}{30m}$

5) $\frac{4a-5}{6a^2+30a} + \frac{a-1}{6a^2+30a}$

6) $\frac{5x-4}{9x^3+27x^2} - \frac{x+6}{9x^3+27x^2}$

9) $\frac{7x}{2x} - \frac{x-2}{20x+16}$

$$11) \frac{7v}{8} - \frac{8v-4}{5v-2}$$

$$12) \frac{4}{n+7} - \frac{7}{n-2}$$

$$15) \frac{6x}{3} + \frac{7}{15x+3}$$

$$16) \frac{5v}{v-3} + \frac{5}{v+6}$$

$$19) \frac{4x}{x+3} - \frac{4x}{x+6}$$

$$20) \frac{2x}{3x+3} - \frac{2}{x+5}$$