

Rationals - Simplify, Multiply, Divide

Date _____ Period _____

Simplify each and state the excluded values.

1) $\frac{5x^2 + 45x}{x^2 + 13x + 36}$

2) $\frac{k^2 - 4}{k^2 - 8k - 20}$

3) $\frac{9n - 15}{6n^2 + 21n + 15}$

4) $\frac{8n^2 + 28n - 36}{12n^2 + 16n - 80}$

Simplify each expression.

5) $\frac{a^2 - 11a + 28}{3a + 21} \cdot \frac{a - 3}{a^2 - 7a + 12}$

6) $\frac{b^2 + 9b + 14}{9b + 81} \cdot \frac{b + 9}{10b + 70}$

7) $\frac{10k + 10}{7k - 9} \cdot \frac{7k^2 - 65k + 72}{5k^2 + 45k + 40}$

8) $\frac{35x^2 + 27x - 18}{5x + 45} \cdot \frac{9x^2}{35x^2 + 27x - 18}$

$$9) \frac{9}{5x} \cdot \frac{35x - 35}{45 - 45x}$$

$$10) \frac{9}{9n - 45} \cdot \frac{n^2 - 10n + 25}{n + 5}$$

$$11) \frac{n^2 + 5n + 4}{n + 4} \cdot \frac{3n - 18}{n^2 - 5n - 6}$$

$$12) \frac{k^2 + 10k + 9}{3k + 27} \cdot \frac{k^2 + 13k + 36}{k^2 + 10k + 9}$$

$$13) \frac{p + 2}{p^2 - 16p + 63} \div \frac{p + 2}{p - 5}$$

$$14) \frac{7m + 7}{7} \div \frac{m^2 + 3m + 2}{9m^2}$$

$$15) \frac{n + 4}{n^2 + n - 12} \div \frac{8n + 56}{n^2 + 2n - 15}$$

$$16) \frac{28n - 40}{35n - 50} \div \frac{21n^2 + 35n}{15n + 25}$$