

# Multiplying and Dividing Rational Expressions Assignment

Multiply the following rational expressions.

1.  $\frac{35r^2}{6} \times \frac{24}{7r^3}$

2.  $\frac{x-4}{y} \times \frac{y}{x^2-16}$

3.  $\frac{3x+15}{10} \times \frac{20}{4x+20}$

4.  $\frac{r^2+r}{4} \times \frac{8}{r^2-1}$

5.  $\frac{5a-5b}{xy^2} \times \frac{x^2y}{2a-2b}$

6.  $\frac{x^2-5x+6}{10x-20} \times \frac{5x+15}{x^2-9}$

7.  $\frac{10y-14x}{x-1} \times \frac{x^2-2x+1}{21x-15y}$

8.  $(3x^2-14x-5) \times \frac{x^2-2x-35}{3x^2-20x-7}$

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Divide the following rational expressions.

9.  $\frac{4a^2}{8a^2} \div \frac{15a^4}{12a^5}$

10.  $\frac{25p^{10}}{9p^5} \div \frac{15p^6}{10p^4}$

11.  $\frac{y^2 - 36}{y + 5} \div \frac{y - 6}{y^2 - 25}$

12.  $\frac{m^3 - 9m}{2m} \div \frac{2m + 6}{4m^2}$

13.  $\frac{5x - 20}{10x} \div \frac{7x - 28}{14x^2}$

14.  $\frac{4a + 12}{2a - 10} \div \frac{a^2 - 9}{a^2 - a - 20}$

15.  $\frac{4x^2 + 12x + 9}{5x^3 - 2x^2} \div \frac{14x^2 + 21x}{10x^2y^2}$

16.  $(6x^2 - 19x + 10) \div \frac{6x^2 - 11x - 10}{9x^2 + 12x + 4}$

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Perform the indicated operation on the following rational expressions.

17.  $\frac{18x^2}{5a} \times \frac{15ax}{81a^2} \times \frac{44ax}{24x^3}$

18.  $\frac{14ab}{18x} \times \frac{27x^3}{15a^3b^3} \div \frac{7a^2x}{25ab}$

19.  $\frac{x-y}{x^2-y^2} \div \frac{6x}{x+y} \times \frac{15x^3}{4}$

20.  $\frac{x^2-xy}{5x^2y^2} \div \frac{4x-4y}{3xy} \times \frac{20y}{11}$