

1. Write in simplest form. $\frac{7x^{10}}{21x^{18}}$ $\frac{1 \cdot x^{10}}{3 \cdot x^{18}}$ $\frac{x^{10-18}}{3} = \frac{x^{-8}}{3} = \frac{1}{x^8 \cdot 3}$

2. Write in simplest form. $\frac{5x-20}{7x-28}$

$$\frac{5(x-4)}{7(x-4)} = \frac{5}{7}$$

3. Multiply. $\frac{8x^5}{5} \cdot \frac{20}{x^{10}}$

4. Multiply. $\frac{3x-27}{x^2-10x} \cdot \frac{6x}{9-x}$

5. Divide. $\frac{2x-6}{21} \div \frac{5x-15}{12}$ $\frac{2x-6}{21} \times \frac{12}{5x-15}$
 $\frac{12(2x-6) \div 21(5x-15)}{24(x-3) \div 105(x-3)} = \frac{8}{35}$

6. Subtract. Express your answer in simplest form.

$$\frac{3x}{16} - \frac{x}{16} \times \left(\frac{3}{16} - \frac{1}{16} \right)$$

$$= \frac{2x}{16}$$

$$= \frac{x}{8}$$

7. Add. Express your answer in simplest form.

$$\frac{x^2}{x+10} + \frac{17x+70}{x+10}$$

8. What values for x must be excluded in the following fraction?

$$\frac{x+2}{x^2-9x+14}$$

9. Solve. $\frac{x}{2} - \frac{x}{3} = 9$

10. Solve. $\frac{x}{3} - \frac{1}{4} = \frac{3x-8}{12}$

11. Solve. $\frac{9}{x-3} = \frac{8}{x+5}$

12. A car uses 10 gallons of gasoline on a trip of 370 miles. At that rate, how much gasoline will a trip of 518 miles require?

13. Simplify. $\frac{1+\frac{2}{3}}{3+\frac{1}{2}}$

14. Simplify. $\frac{\frac{m^7}{21}}{\frac{m^9}{14}}$