

1. $\frac{3}{6} = \frac{3}{2 \cdot 3}$ Factor + Cancel $\frac{24}{\cancel{4} \cdot \cancel{6} \cdot 3}$

2. $\frac{24}{30} = \frac{\cancel{2} \cdot 2 \cdot 2 \cdot \cancel{3} \cdot 1}{\cancel{2} \cdot \cancel{3} \cdot 5} = \frac{4}{5}$
 $\frac{24}{30}$ with prime factorization: $24 = 2^3 \cdot 3$, $30 = 2 \cdot 3 \cdot 5$

10. $\frac{36}{54} = \frac{\cancel{6} \cdot 6}{\cancel{6} \cdot 9} = \frac{2 \cdot \cancel{3}}{3 \cdot \cancel{3}} = \boxed{\frac{2}{3}}$

4. $\frac{10}{40} = \frac{\cancel{10}}{4 \cdot \cancel{10}} = \frac{1}{4}$ Reduce \rightarrow factor + cancel

29. $\frac{21}{49} = \frac{3 \cdot \cancel{7}}{7 \cdot \cancel{7}} = \frac{3}{7}$

11. $\frac{42}{48} = \frac{\cancel{6} \cdot 7}{\cancel{6} \cdot 8} = \frac{7}{8}$

$\frac{2 \cdot \cancel{3} \cdot \cancel{7}}{2 \cdot \cancel{3} \cdot 2 \cdot 2 \cdot 2} = \frac{7}{8}$

$$1.) - \frac{36x^3}{42x^2} = - \frac{\cancel{6} \cdot \cancel{6} x \cancel{x} \cancel{x}}{\cancel{6} \cdot \cancel{7} x \cancel{x}}$$

$$-\frac{6x}{7} \text{ or } -\frac{6}{7}x$$

$$3.) \frac{16p^3}{28p} = \frac{\cancel{4} \cdot \cancel{4} \cancel{p} \cancel{p}}{\cancel{4} \cdot \cancel{7} \cancel{p}} = \frac{4p}{7}$$

$$5.) - \frac{70n^2}{28n} = - \frac{\cancel{7} \cdot \cancel{10} n \cancel{n}}{\cancel{7} \cdot \cancel{4} n}$$

$$-\frac{5n}{2}$$

$$7. \frac{(2r-4)}{(r-2)} = \frac{2(\cancel{r-2})}{(\cancel{r-2})} = 2$$

$$9. \frac{(x-4)}{(3x^2-12x)} = \frac{\cancel{(x-4)}}{3x\cancel{(x-4)}} = \frac{1}{3x}$$

$$\frac{1}{7 \cdot 3} \cdot \frac{2}{6} = \frac{1}{3} \text{ not } 3 = \frac{1}{3}$$

$$11. \frac{(v-5)}{(v^2-10v+25)} = \frac{\cancel{1(v-5)}}{(\cancel{v-5})(v-5)}$$

$$\frac{1}{v-5}$$

$$13. \frac{27}{27x+18} = \frac{\cancel{9} \cdot 3}{\cancel{9}(x+2)} = \frac{3}{x+2}$$

$$10. \frac{15a-3}{24} = \frac{\cancel{3}(5a-1)}{\cancel{3} \cdot 8}$$

$$\frac{5a-1}{8}$$

15.
$$\frac{x^2 + 8x + 12}{x^2 + 3x - 18} = \frac{\cancel{(x+6)}(x+2)}{(x-3)\cancel{(x+6)}}$$

$\begin{matrix} 1 \cdot 12 \\ 2 \cdot 6 \\ 3 \cdot 4 \end{matrix}$
 $\begin{matrix} 1 \cdot 18 \\ 2 \cdot 9 \\ \boxed{-3 \cdot 6} \end{matrix}$

$\frac{x+2}{x-3}$

17.
$$\frac{(b^2 + 3b - 28)}{(b^2 - 49)} = \frac{(b-4)\cancel{(b+7)}}{\cancel{(b+7)}(b-7)}$$

$\frac{b-4}{b-7}$

