

## Algebra II

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2)	$\frac{4}{5}$	16)	$\frac{(8t+5)(8t-5)}{16s^2t^2}$ or $\frac{64t^2-25}{16s^2t^2}$	30)	$\frac{2a}{a-b}$
4)	$\frac{1}{3}$	18)	$\frac{x+y+z}{xyz}$	32)	$\frac{4xy}{(x+y)^2(x-y)^2}$
6)	$\frac{8}{15}$	20)	$\frac{(x+2y)^2}{4x^2y^2}$	34)	$\frac{4t}{(2t+1)(2t-1)^2}$
8)	$\frac{1}{2}$	22)	$\frac{x^2+1}{(x+1)(x-1)}$	36)	$\frac{2x}{y(2x-3y)^2}$
10)	$\frac{x^2+4}{2x^2}$	24)	$\frac{2}{u(u+2)(u-2)}$	38)	$\frac{u+2v}{2u-v}$
12)	$\frac{4x^2+25}{20x^2}$	26)	$\frac{2(y-1)}{y(y+1)(y-2)}$		
14)	$\frac{(x+y)(x-y)}{x^3y^3}$ or $\frac{x^2-y^2}{x^3y^3}$	28)	$\frac{3}{(p+2)(p-1)^2}$		

$$\begin{array}{r}
 6) \quad \frac{7}{12} - 1 + \frac{19}{20} \\
 \frac{35 - 60 + 57}{60} \\
 \frac{32}{60} \\
 \frac{8}{15}
 \end{array}$$

$$\begin{array}{r}
 16) \quad 4s^{-2} - (4t)^{-2} \\
 \frac{4}{s^2} - \frac{1}{(4t)^2} \\
 \frac{4}{s^2} - \frac{1}{16t^2} \\
 \frac{4 \cdot 16t^2 - 1 \cdot s^2}{16s^2t^2} \\
 \frac{64t^2 - s^2}{16s^2t^2}
 \end{array}$$

$$\begin{array}{r}
 20) \quad \frac{1}{x^2} + \frac{1}{xy} + \frac{1}{4y^2} \\
 \frac{1 \cdot 4y^2 + 1 \cdot 4xy + 1 \cdot x^2}{4x^2y^2} \\
 \frac{4y^2 + 4xy + x^2}{4x^2y^2} \\
 \boxed{\frac{(2y+x)(2y+x)}{4x^2y^2}}
 \end{array}$$

Since nothing will cancel, this step isn't necessary.

$$24) \frac{1}{u^2-2u} - \frac{1}{u^2-4}$$

$$\frac{\overbrace{(u+2)}^{\text{red}}}{\overbrace{(u+2)}^{\text{red}} u(u-2)} - \frac{1}{\overbrace{(u+2)}^{\text{red}}(u-2) \overbrace{u}^{\text{blue}}}}$$

$$\frac{\overbrace{1 \cdot (u+2)}^{\text{red}} - \overbrace{1 \cdot u}^{\text{blue}}}{u(u-2)(u+2)}$$

$$\frac{u+2-u}{u(u-2)(u+2)}$$

$$\frac{2}{u(u-2)(u+2)}$$

$$22) \frac{x}{x-1} - \frac{1}{x+1}$$

$$\frac{x \cdot \overbrace{(x+1)}^{\text{green}} - \overbrace{1 \cdot (x-1)}^{\text{blue}}}{(x-1)(x+1)}$$

$$\frac{x^2+x-x+1}{(x-1)(x+1)}$$

$$\frac{x^2+1}{(x-1)(x+1)}$$

$$28) \frac{1}{p^2-2p+1} - \frac{1}{p^2+p-2}$$

$$\frac{1}{(p-1)(p-1)} - \frac{1}{(p+2)(p-1)}$$

$$\frac{1 \cdot (p+2) - 1 \cdot (p-1)}{(p+2)(p-1)^2}$$

$$\frac{\cancel{p}+2 - \cancel{p}+1}{(p+2)(p-1)^2}$$

$$\frac{3}{(p+2)(p-1)^2}$$

$$34) \frac{1}{4p^2 - 4p + 1} + \frac{1}{4p^2 - 1}$$

$$\frac{1}{(2p-1)(2p-1)} + \frac{1}{(2p+1)(2p-1)}$$

$$\frac{1 \cdot (2p+1) + 1 \cdot (2p-1)}{(2p+1)(2p-1)^2}$$

$$\frac{4p}{(2p+1)(2p-1)^2}$$

$$38) \frac{3u}{2u-v} - \frac{2u}{2u+v} + \frac{2v^2}{4u^2-v^2}$$

$$\frac{3u}{(2u-v)} - \frac{2u}{(2u+v)} + \frac{2v^2}{(2u+v)(2u-v)}$$

$$\frac{3u \cdot (2u+v) - 2u(2u-v) + 2v^2}{(2u+v)(2u-v)}$$

$$\frac{6u^2 + 3uv - 4u^2 + 2uv + 2v^2}{(2u+v)(2u-v)} = \frac{2u^2 + 5uv + 2v^2}{(2u+v)(2u-v)}$$

$$= \frac{\cancel{(2u+v)}(u+2v)}{\cancel{(2u+v)}(2u-v)} = \frac{u+2v}{2u-v}$$

$$36) \frac{3}{(4x^2 - 12xy + 9y^2)} + \frac{1}{(2xy - 3y^2)}$$

$$\frac{3y}{y(2x-3y)(2x-3y)} + \frac{1(2x-3y)}{y(2x-3y)(2x-3y)}$$

$$\frac{\cancel{3y} + 1\cancel{(2x-3y)}}{y(2x-3y)^2} =$$

$$\frac{2x}{y(2x-3y)^2}$$