

1. Add or subtract the following rational expressions to a single rational expression and then simplify. If the domain changes when you simplify, make note of the difference.

a.
$$\frac{5y}{y+4} + \frac{20}{y-5}$$

d.
$$\frac{5}{x^2 - 5x - 6} - \frac{1}{x^2 - 7x + 6}$$

b.
$$\frac{4}{t^2 - 3t - 40} - \frac{t - 4}{t^2 - 3t - 40}$$

e.
$$\frac{3}{x - 3} - \frac{6x}{x^2 - 9}$$

c.
$$\frac{5}{y+5} - \frac{1}{y+2}$$

f.
$$\frac{r}{r+6} - \frac{r+42}{r^2+6r}$$

$$\text{g. } \frac{-4}{x^2 - 4} - \frac{4}{x + 2} + \frac{1}{x - 2}$$

$$\text{j. } \frac{r}{20x} - \frac{4r}{5x}$$

$$\text{h. } -\frac{6y}{y^2 + 4y - 5} - \frac{3y}{y + 5}$$

$$\text{k. } \frac{4}{xr - 3} - \frac{2xr}{x^2r^2 - 9}$$

$$\text{i. } \frac{4}{t + 1} - 5$$

$$\text{l. } \frac{2xt}{x^2 + 5xt + 6t^2} - \frac{6t}{x + 2t}$$