

## Adding/Subtracting Rational Expressions

**Simplify each expression.**

1)  $\frac{u-v}{8v} + \frac{6u-3v}{8v}$

2)  $\frac{m-3n}{6m^3n} - \frac{m+3n}{6m^3n}$

3)  $\frac{5}{a^2+3a+2} + \frac{5a+1}{a^2+3a+2}$

4)  $\frac{5}{10n^2+16n+6} + \frac{n-6}{10n^2+16n+6}$

5)  $\frac{r+6}{3r-6} + \frac{r+1}{3r-6}$

6)  $\frac{x+2}{2x^2+13x+20} - \frac{x+3}{2x^2+13x+20}$

7)  $\frac{6}{x-1} - \frac{5x}{4}$

8)  $6 - \frac{x+5}{(7x-5)(x+4)}$

9)  $\frac{3}{x+7} + \frac{4}{x-8}$

10)  $\frac{3}{4v^2+4v} - \frac{7}{2}$

11)  $\frac{7}{3} - \frac{8}{12x-8}$

12)  $\frac{5}{n+5} + \frac{4n}{2n+6}$

13)  $\frac{2x}{5x+4} + \frac{6x}{2x+3}$

14)  $\frac{2}{3x^2+12x} + \frac{8}{2x}$

15)  $\frac{7n}{n+1} + \frac{8}{n-7}$

16)  $\frac{2}{n+8} + \frac{4}{n+1}$

17)  $\frac{3}{8} - \frac{3}{3x+4}$

18)  $\frac{3}{b-8} + \frac{7}{b+3}$

19)  $\frac{3}{x+6} + \frac{7}{x-2}$

20)  $\frac{4}{x+1} - \frac{2}{x+2}$

21)  $\frac{5n+5}{5n^2+35n-40} + \frac{7n}{3n}$

22)  $\frac{3}{n-5} + \frac{6}{3n-8}$

23)  $\frac{\frac{25}{4}}{\frac{1}{5} - \frac{4}{25}}$

24)  $\frac{8}{\frac{4}{9} + \frac{16}{9}}$

25)  $\frac{\frac{a}{25} - \frac{a}{5}}{a}$

26)  $\frac{\frac{5}{4}}{\frac{5}{m} - \frac{4}{m}}$

**Critical thinking questions:**

27) Simplify:  $\frac{a}{b} + \frac{c}{d}$

28) Split into a sum of two rational expressions with unlike denominators:

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