# Adding + Subtracting Rational Expressions

Date_____ Period____

**Simplify each expression.**

1) $\frac{u+5v}{8v^2u^2} - \frac{u-6v}{8v^2u^2}$

2) $\frac{5n}{30m} + \frac{2m+4n}{30m}$

3) $\frac{a+2b}{6a^3} - \frac{5a+4b}{6a^3}$

4) $\frac{x+y}{18xy} - \frac{6x+y}{18xy}$

5) $\frac{4a-5}{6a^2+30a} + \frac{a-1}{6a^2+30a}$

6) $\frac{5x-4}{9x^3+27x^2} - \frac{x+6}{9x^3+27x^2}$

7) $\frac{b-3}{12b+18} + \frac{4b}{12b+18}$

8) $\frac{n-4}{n^2-n-20} + \frac{n+1}{n^2-n-20}$

9) $\frac{7x}{2x} - \frac{x-2}{20x+16}$

10) $\frac{8}{7v-6} + \frac{4}{3v^2}$

11) $\frac{7v}{8} - \frac{8v-4}{5v-2}$

12) $\frac{4}{n+7} - \frac{7}{n-2}$

13) $\frac{7}{3n^2+24n} - \frac{7}{2n}$

14) $\frac{6}{v-2} - \frac{7}{2v+7}$

15) $\frac{6x}{3} + \frac{7}{15x+3}$

16) $\frac{5v}{v-3} + \frac{5}{v+6}$

17) $\frac{4x}{x^2+4x-5} - \frac{5}{4}$

18) $\frac{2}{x+3} - \frac{6x}{2x+1}$

19) $\frac{4x}{x+3} - \frac{4x}{x+6}$

20) $\frac{2x}{3x+3} - \frac{2}{x+5}$

21) $\frac{6}{x-2} + \frac{6}{x+1}$

22) $\frac{v-2}{3v^4-15v^3-18v^2} + 3v$

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Date_____ Period____

**Simplify each expression.**

1) $\frac{u+5v}{8v^2u^2} - \frac{u-6v}{8v^2u^2}$

$\frac{11}{8vu^2}$

2) $\frac{5n}{30m} + \frac{2m+4n}{30m}$

$\frac{9n+2m}{30m}$

3) $\frac{a+2b}{6a^3} - \frac{5a+4b}{6a^3}$

$\frac{-2a-b}{3a^3}$

4) $\frac{x+y}{18xy} - \frac{6x+y}{18xy}$

$-\frac{5}{18y}$

5) $\frac{4a-5}{6a^2+30a} + \frac{a-1}{6a^2+30a}$

$\frac{5a-6}{6a^2+30a}$

6) $\frac{5x-4}{9x^3+27x^2} - \frac{x+6}{9x^3+27x^2}$

$\frac{4x-10}{9x^3+27x^2}$

7) $\frac{b-3}{12b+18} + \frac{4b}{12b+18}$

$\frac{5b-3}{12b+18}$

8) $\frac{n-4}{n^2-n-20} + \frac{n+1}{n^2-n-20}$

$\frac{2n-3}{n^2-n-20}$

9) $\frac{7x}{2x} - \frac{x-2}{20x+16}$

$\frac{69x+58}{4(5x+4)}$

10) $\frac{8}{7v-6} + \frac{4}{3v^2}$

$\frac{24v^2+28v-24}{3v^2(7v-6)}$

11) $\frac{7v}{8} - \frac{8v-4}{5v-2}$

$\frac{35v^2 - 78v + 32}{8(5v-2)}$

12) $\frac{4}{n+7} - \frac{7}{n-2}$

$\frac{-3n - 57}{(n+7)(n-2)}$

13) $\frac{7}{3n^2 + 24n} - \frac{7}{2n}$

$\frac{-154 - 21n}{6n(n+8)}$

14) $\frac{6}{v-2} - \frac{7}{2v+7}$

$\frac{5v + 56}{(2v+7)(v-2)}$

15) $\frac{6x}{3} + \frac{7}{15x+3}$

$\frac{30x^2 + 6x + 7}{3(5x+1)}$

16) $\frac{5v}{v-3} + \frac{5}{v+6}$

$\frac{5v^2 + 35v - 15}{(v+6)(v-3)}$

17) $\frac{4x}{x^2 + 4x - 5} - \frac{5}{4}$

$\frac{-4x - 5x^2 + 25}{4(x+5)(x-1)}$

18) $\frac{2}{x+3} - \frac{6x}{2x+1}$

$\frac{-14x + 2 - 6x^2}{(2x+1)(x+3)}$

19) $\frac{4x}{x+3} - \frac{4x}{x+6}$

$\frac{12x}{(x+3)(x+6)}$

20) $\frac{2x}{3x+3} - \frac{2}{x+5}$

$\frac{2x^2 + 4x - 6}{3(x+1)(x+5)}$

21) $\frac{6}{x-2} + \frac{6}{x+1}$

$\frac{12x - 6}{(x+1)(x-2)}$

22) $\frac{v-2}{3v^4 - 15v^3 - 18v^2} + 3v$

$\frac{9v^5 - 45v^4 - 54v^3 + v - 2}{3v^2(v+1)(v-6)}$