

## Adding + Subtracting Rational Expressions

Simplify each expression.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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