

Practice: Level 3

Kuta Software - Infinite Algebra 1

Adding + Subtracting Rational Expressions

Simplify each expression.

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

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

$$= \frac{90x^2 + 18x + 21}{(3)(15x+3)} = \frac{\cancel{3}(30x^2 + 6x + 7)}{\cancel{3}(15x+3)}$$

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

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

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

Practice: Level 4

Kuta Software - Infinite Algebra 1

Adding + Subtracting Rational Expressions

Simplify each expression.

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

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

$$= \frac{\cancel{4x^2} + 24x - \cancel{4x^2} - 12x}{(x+3)(x+6)}$$

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

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

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

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

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

$$= \frac{v-2 + 9v^5 - 45v^4 - 54v^3}{3v^4 - 15v^3 - 18v^2}$$

$$= \frac{9v^5 - 45v^4 - 54v^3 + v - 2}{3v^4 - 15v^3 - 18v^2}$$

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

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