Algebra 2 Unit 4 Day 03 Name Master Ee

Adding/Subtracting Rational Expressions Practice

Date

Simplify each expression.

1) $\frac{a+3b}{20ab^2} - \frac{4b}{20ab^2}$ $\frac{a+3b-4b}{20ab^2} = \frac{a-b}{20ab^2}$

2) $\frac{5x-5y}{25y^4} + \frac{5y}{25y^4}$ $\frac{5x-5y+5y}{25y^4} = \frac{5x}{25y^4} = \frac{x}{5y^4}$

3) $\frac{4y}{2x} + \frac{2y}{2x^3}$ $\frac{4y}{2x}\cdot\frac{x^2}{x^2} \quad \frac{4x^2y}{2x^3} + \frac{2y}{2x^3}$

$\frac{4x^2y+2y}{2x^3} = \frac{2y(2x^2+1)}{2x^3} = \frac{y(2x^2+1)}{x3}$

4) $\frac{4y}{2x} \cdot 3x + \frac{4x}{3x^2} \cdot 2$

$\frac{12xy}{6x^2} + \frac{8x}{6x^2} = \frac{12xy+8x}{6x^2}$

$\frac{4x(3y+2)}{6x^2} = \frac{2(3y+2)}{3x}$

5) $\frac{6}{2} \cdot 2m^2 + \frac{5n}{4m^2}$

$\frac{12m^2}{4m^2} + \frac{5n}{4m^2} = \frac{5n+12m^2}{4m^2}$

6) $\frac{4x}{2x} \cdot 3 - \frac{2y}{6} \cdot x$

$\frac{12x}{6x} - \frac{2xy}{6x}$ $\frac{12x-2xy}{6x}$ $\frac{2x(6-y)}{6x}$

$\frac{6-y}{3}$

7) $\frac{(m-3)}{3m+5}(m-5) + \frac{6}{m-5}(3m+5)$

$\frac{m^2-8m+15}{(3m+5)(m-5)} + \frac{18m+30}{(3m+5)(m-5)}$

$\frac{m^2+10m+45}{(3m+5)(m-5)}$

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

$\frac{6x^2+9x}{4x^2(2x+3)} - \frac{(4x^3+24x^2)}{4x^2(2x+3)}$

$\frac{6x^2+9x-4x^3-24x^2}{4x^2(2x+3)}$ $\frac{-4x^3-18x^2+9x}{4x^2(2x+3)}$

$\frac{x(-4x^2-18x+9)}{4x^2(2x+3)} = \frac{-4x^2-18x+9}{4x(2x+3)}$

9) $\frac{3}{5x^2}+\frac{x+4}{x-3}$ $\quad (x-3)\quad (5x^2)$

$\frac{3x-9}{5x^2(x-3)}+\frac{5x^3+20x^2}{5x^2(x-3)}$

$\frac{5x^3+20x^2+3x-9}{5x^2(x-3)}$

10) $\frac{4n}{3n-2}-\frac{3n}{n-5}$ $\quad (n-5)\quad (3n-2)$

$\frac{4n^2-20n}{(3n-2)(n-5)}-\frac{9n^2-6n}{(3n-2)(n-5)}$

$\frac{4n^2-20n-9n^2+6n}{(3n-2)(n-5)}$ $\quad \frac{-5n^2-14n}{(3n-2)(n-5)}$

11) $\frac{4n}{2n}+\frac{n-2}{n+3}$ $\quad (n+3)\quad (2n)$

$\frac{4n^2+12n}{2n(n+3)}+\frac{2n^2-4n}{2n(n+3)}$

$\frac{4n^2+12n+2n^2-4n}{2n(n+3)}$

$\frac{6n^2+8n}{2n(n+3)}=\frac{2n(3n+4)}{2n(n+3)}=\frac{3n+4}{n+3}$

12) $\frac{r-2}{r+1}-\frac{2r}{r+3}$ $\quad (r+3)\quad (r+1)$

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

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

$\frac{-r^2-r-6}{(r+1)(r+3)}$ or $\frac{-(r^2+r+6)}{(r+1)(r+3)}$

13) $\frac{5}{2k}-\frac{6k}{5k+3}$ $\quad (5k+3)\quad (2k)$

$\frac{25k+15}{2k(5k+3)}-\frac{12k^2}{2k(5k+3)}$

$\frac{-12k^2+25k+15}{2k(5k+3)}$

14) $\frac{2}{2k+3}+\frac{6}{k-2}$ $\quad (k-2)\quad (2k+3)$

$\frac{2k-4}{(2k+3)(k-2)}+\frac{12k+18}{(2k+3)(k-2)}$

$\frac{14k+14}{(2k+3)(k-2)}=\frac{14(k+1)}{(2k+3)(k-2)}$

15) $\frac{2}{3b-12}+\frac{4}{2}$ $\quad (3b-12)$

$3(b-4)\quad 2$

$\frac{4}{6(b-4)}+\frac{12b-48}{6(b-4)}$

$\frac{12b-44}{6(b-4)}=\frac{4(3b-11)}{6(b-4)}$

16) $\frac{6n}{5n}-\frac{3n}{n-6}$ $\quad (n-6)\quad (n-6)$

$\frac{6n^2-36n}{5n(n-6)}-\frac{3n^2-18n}{5n(n-6)}$

$\frac{6n^2-36n-3n^2+18n}{5n(n-6)}$

$\frac{3n^2-18n}{5n(n-6)}\cdot\frac{3n(n-6)}{5n(n+6)}=\frac{3}{5}$