

4.4 Adding and Subtracting Rational Expressions

Date _____

Simplify each expression and state the excluded values.

1) $\frac{6}{6n^3 - 12n^2} + \frac{n - 6}{6n^3 - 12n^2}$

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

3) $\frac{x + 5}{20x^2 + 4x} - \frac{4x}{20x^2 + 4x}$

4) $\frac{a + 2}{6a + 24} + \frac{a + 6}{6a + 24}$

5) $\frac{n - 3}{18n^2 - 45n} - \frac{3}{18n^2 - 45n}$

6) $\frac{p - 1}{8p^2 + 20p} - \frac{p - 2}{8p^2 + 20p}$

7) $\frac{6n}{n - 5} + \frac{5}{n - 4}$

8) $\frac{6}{3b + 12} + \frac{6}{2b}$

$$9) \frac{k+3}{2k+2} + \frac{2}{4}$$

$$10) \frac{6}{2n} + \frac{3n-1}{10n-8}$$

$$11) \frac{3}{5} + \frac{x-4}{x-1}$$

$$12) \frac{3}{k-5} + \frac{6k}{k+5}$$

$$13) \frac{r+3}{2} - \frac{r-5}{5r-1}$$

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

$$15) \frac{3n}{6} - \frac{6}{n+2}$$

$$16) \frac{k-3}{k-1} - \frac{5k}{6}$$

$$17) \frac{6v}{3} - \frac{4v}{6v-9}$$

$$18) \frac{6}{n-4} - \frac{2}{6n^3}$$

Answers to 4.4 Adding and Subtracting Rational Expressions

$$1) \frac{1}{6n^2 - 12n}$$

$$5) \frac{n - 6}{18n^2 - 45n}$$

$$9) \frac{k + 2}{k + 1}$$

$$13) \frac{5r^2 + 12r + 7}{2(5r - 1)}$$

$$17) \frac{12v^2 - 22v}{3(2v - 3)}$$

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

$$6) \frac{1}{8p^2 + 20p}$$

$$10) \frac{29n - 24 + 3n^2}{2n(5n - 4)}$$

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

$$18) \frac{18n^3 - n + 4}{3n^3(n - 4)}$$

$$3) \frac{-3x + 5}{20x^2 + 4x}$$

$$7) \frac{6n^2 - 19n - 25}{(n - 5)(n - 4)}$$

$$11) \frac{8x - 23}{5(x - 1)}$$

$$15) \frac{n^2 + 2n - 12}{2(n + 2)}$$

$$4) \frac{1}{3}$$

$$8) \frac{5b + 12}{b(b + 4)}$$

$$12) \frac{-27k + 15 + 6k^2}{(k - 5)(k + 5)}$$

$$16) \frac{11k - 18 - 5k^2}{6(k - 1)}$$