

Working with Rational Numbers

MCF3M

Examples:

1. Evaluate the following:

a) $\frac{2}{3} + \frac{4}{5}$

b) $\frac{7}{9} - \frac{2}{3}$

c) $\left(\frac{2}{5}\right)\left(\frac{-4}{7}\right)$

d) $\frac{3}{4} \div \frac{15}{16}$

2. Let $x = \frac{2}{3}$, $y = \frac{-3}{4}$ and $z = \frac{1}{5}$. Evaluate the following:

a) $2x - 8y$

b) $\frac{x+z}{y+z}$

3. Solve the following.

a) $\frac{1}{2}x - \frac{2}{3} = x + \frac{1}{4}$

b) $\frac{x+4}{3} = \frac{2x-1}{5}$

c) $\frac{2x+1}{5} - 2 = \frac{3}{4}$

Assigned Problems

1. Evaluate the following. Ensure your answer is in lowest terms.

a) $\frac{2}{3} + \frac{1}{4} + \frac{1}{8}$

b) $\left(\frac{-18}{7}\right)\frac{49}{4}$

c) $\frac{24}{7} \div \frac{3}{14}$

d) $4\left(\frac{2}{5}\right) - \left(\frac{2}{3}\right)^2$

e) $\frac{1}{10} - 3\left(\frac{2}{3}\right)$

2. Let $x = \frac{-1}{4}$, $y = \frac{5}{2}$, $z = \frac{5}{12}$. Evaluate each of the following:

a) $2x - 3y + 4z$

b) $\frac{x}{2z-y}$

c) $x^2 - 2y$

3. Solve the following equations.

a) $\frac{1}{3}n - \frac{5}{6} = 1 - \frac{3}{2}n$

b) $\frac{10}{x} = \frac{3}{5}$

c) $\frac{2x+1}{3} + 3x = \frac{1}{2}$

d) $\frac{3(y-1)}{4} = \frac{y+2}{5}$

ANSWERS

1. a) $\frac{22}{15}$ b) $-\frac{63}{2}$ c) 16 d) $\frac{52}{40}$ e) $-\frac{19}{10}$

2. a) $-\frac{19}{3}$ b) $\frac{3}{20}$ c) $-\frac{79}{16}$

3. a) $n = 1$ b) $x = \frac{50}{3}$ c) $x = \frac{1}{22}$ d) $y = \frac{23}{11}$