Feb. 6, 2018

Please take out your HW to be checked

Warm up

a) $3 + (-2) - (-5)$

$= 1 + 5$

$= \boxed{6}$

b) $-2(-3)(-2)(-4)$

$= 6(-2)(-4)$

$= (-12)(-4)$

$= \boxed{+48}$

2d)

$5, -20, 80, \ldots$

$\times -4 \quad \times -4$

$80(-4) = \boxed{-320}$

$-320(-4) = \boxed{+1280}$

$1280(-4) = \boxed{-5120}$

Fractions

To make a fraction in lowest terms, divide the numerator and denominator by a common factor. Divide by prime factors:

2, 3, 5, 7, 11, 13, 17, ...

Ex. 1: Bring to lowest terms:

a) $\frac{18}{20} \begin{matrix} \div 2 \\ = \\ \div 2 \end{matrix} \boxed{\frac{9}{10}}$

b) $\frac{125}{100} \begin{matrix} \div 5 \\ = \\ \div 5 \end{matrix} \frac{25}{20} \begin{matrix} \div 5 \\ = \\ \div 5 \end{matrix} \boxed{\frac{5}{4}}$

c) $\frac{9}{30} \begin{matrix} \div 3 \\ = \\ \div 3 \end{matrix} \boxed{\frac{3}{10}}$

d) $\frac{2400}{3600} \begin{matrix} \div 100 \\ = \\ \div 100 \end{matrix}$

$$\frac{24}{36} \overset{\div 2}{=} \frac{12}{18} \overset{\div 6}{=} \boxed{\frac{2}{3}}$$

An improper fraction is when the numerator is bigger than the denominator.

Please leave your answers as improper fractions.

e) $2\frac{1}{2} = \boxed{\frac{5}{2}}$

"2 times 2 + 1"

f) $8\frac{2}{5} = \boxed{\frac{42}{5}}$

g) $-3\frac{1}{8} = \boxed{-\frac{25}{8}}$

h) $-9\frac{1}{3}$

$= \boxed{-\frac{28}{3}}$

i) $18\frac{17}{18}$

$= \boxed{\frac{341}{18}}$

$$\begin{array}{r} 6 \\ 18 \\ \times\ 18 \\ \hline 144 \\ 180 \\ \hline 324 \\ +\ 17 \\ \hline 341 \end{array}$$

Adding and Subtracting Fractions

To do this you need a common denominator, make equivalent fractions then add the numerators.

) $\frac{2}{5} + \frac{1}{4}$

$\left(\times 4 \right.$ $\left. \times 5 \right)$

$= \frac{8}{20} + \frac{5}{20}$

$= \boxed{\frac{13}{20}}$

k) $\frac{3}{7} - \frac{1}{2}$

$\times 2 \left(\quad \right) \times 7$

$= \frac{6}{14} - \frac{7}{14}$

$= \boxed{-\frac{1}{14}}$

l) $\frac{3}{4} + \frac{4}{5} + \frac{5}{6}$

$\times 30$ $\times 24$ $\times 20$

$= \frac{90}{120} + \frac{96}{120} + \frac{100}{120}$

$= \frac{286}{120} = \boxed{\frac{143}{60}}$

$$\frac{3}{4} + \frac{4}{5} + \frac{5}{6}$$

$$= \frac{15}{20} + \frac{16}{20} + \frac{5}{6}$$

$$= \frac{31}{20} + \frac{5}{6}$$

$$\times 6 \left(\quad \right) \times 20$$

$$= \frac{186}{120} + \frac{100}{120}$$

$$= \frac{286}{120} = \boxed{\frac{143}{60}}$$

m) $3\frac{1}{8} - \frac{2}{5}$

$= \frac{25}{8} - \frac{2}{5}$

x5 ( ) x 8

$= \frac{125}{40} - \frac{16}{40}$

$= \boxed{\frac{109}{40}}$

Multiplying Fractions

Just multiply the numerators, multiply the denominators, then bring to lowest terms.

n) $\frac{2}{3} \times \frac{1}{4}$: $\frac{\cancel{2}}{3} \times \frac{1}{\cancel{4}_2}$

$= \frac{2}{12}$: $= \boxed{\frac{1}{6}}$

$= \frac{1}{6}$

o) $2\frac{1}{2} \times 3\frac{2}{3}$

$= \frac{5}{2} \times \frac{11}{3}$

$= \boxed{\frac{55}{6}}$

p) $4\frac{1}{8} \times -\frac{4}{3}$

$\frac{33}{8} \times -\frac{4}{3}$

$-\frac{132}{24}$

$-\frac{66}{12} = -\frac{33}{6} = \boxed{-\frac{11}{2}}$

$\frac{\cancel{33}^{11}}{\cancel{8}_{2}} \times \frac{-\cancel{4}^{1}}{\cancel{3}_{1}}$

$= \boxed{-\frac{11}{2}}$

Dividing Fractions

Invert the second fraction and multiply.

q) $\frac{2}{3} \div \frac{3}{4}$

$= \frac{2}{3} \times \frac{4}{3}$

$= \boxed{\frac{8}{9}}$

r) $\frac{4}{7} \div 2\frac{1}{3}$

$= \frac{4}{7} \div \frac{7}{3}$

$= \frac{4}{7} \cdot \frac{3}{7}$

• means multiply

$= \boxed{\frac{12}{49}}$

5) ⊛ $2\frac{3}{4} \div 2$

$\frac{11}{4} \div \frac{2}{1}$

$= \frac{11}{4} \times \frac{1}{2}$

$= \boxed{\frac{11}{8}}$