

Warm up:

$$\begin{aligned}
 1) \quad & -2\frac{3}{8} - \left(-1\frac{1}{3}\right) \\
 & -\frac{19}{8} - \left(-\frac{4}{3}\right) \\
 & -\frac{57}{24} + \left(+\frac{32}{24}\right) \\
 & -\frac{25}{24} = -1\frac{1}{24}
 \end{aligned}$$

$$\begin{aligned}
 2) \quad & -6\frac{2}{5} + 3\frac{1}{2} \\
 & -\frac{32}{5} + \frac{7}{2} \\
 & -\frac{64}{10} + \frac{35}{10} \\
 & -\frac{29}{10} = -2\frac{9}{10}
 \end{aligned}$$

How do you multiply fractions?

$$\frac{2 \rightarrow 5}{3 \rightarrow 7} = \frac{10}{21}$$

$$\frac{1}{9} \cdot \frac{7}{8} = \frac{4}{9} \cdot \frac{7}{8} = \frac{28}{72} = \frac{14}{36} = \frac{7}{18}$$

$$\begin{array}{r} 15 \\ 3 \overline{)46} \\ \underline{-3} \downarrow \\ 16 \\ \underline{-15} \\ 1 \end{array}$$

$$2\frac{1}{3} \cdot 6\frac{4}{7}$$

$$\frac{1}{\cancel{3}} \cdot \frac{46}{\cancel{7}_1} = \frac{46}{3}$$

$$15\frac{1}{3}$$

$$5 \cdot \frac{3}{4}$$

$$\frac{5}{1} \cdot \frac{3}{4} = \frac{15}{4} = 3 \frac{3}{4}$$

multiplicative  
inverses

$$3 \cdot \frac{1}{3}$$
$$\frac{\cancel{3}}{1} \cdot \frac{1}{\cancel{3}} = 1$$

$$\frac{2}{5} \cdot \frac{5}{2} = 1$$

division is  
the same as  
multiplying by  
the reciprocal

$$\frac{3}{5} \div \frac{2}{7}$$

$$\frac{3}{5} \cdot \frac{7}{2} = \frac{21}{10} = 2\frac{1}{10}$$



$$2\frac{2}{3} \div 4\frac{1}{4}$$

$$\frac{8}{3} \div \frac{17}{4}$$

$$\frac{8}{3} \rightarrow \frac{4}{17} = \frac{32}{51}$$

$$1) \frac{7}{8} \cdot \frac{2}{5}$$

$$4) \frac{1}{4} \div \frac{2}{9}$$

$$2) 3\frac{2}{5} \cdot \frac{1}{8}$$

$$5) 1\frac{5}{6} \div 2\frac{1}{4}$$

$$3) 4\frac{1}{2} \cdot 7\frac{3}{4}$$

$$6) 3\frac{2}{3} \div 5$$

$$1) \frac{\cancel{7} \cdot \cancel{2}}{\cancel{84} 5} = \frac{7}{20}$$
$$\frac{14}{40} \rightarrow \frac{7}{20}$$

The image shows a handwritten mathematical derivation. It starts with the fraction  $\frac{7 \cdot 2}{84 \cdot 5}$  where the 7 and 2 in the numerator and the 84 in the denominator are crossed out. This is followed by an equals sign and a circled fraction  $\frac{7}{20}$ . Below this, the fraction  $\frac{14}{40}$  is written, with a blue arrow pointing from it to the circled  $\frac{7}{20}$ .

$$2) 3\frac{2}{5} \cdot \frac{1}{8}$$

$$\frac{17}{5} \cdot \frac{1}{8} = \frac{17}{40}$$

$$3) 4\frac{1}{2} \cdot 7\frac{3}{4}$$
$$\frac{9}{2} \cdot \frac{31}{4} = \frac{279}{8} = 34\frac{7}{8}$$
$$\begin{array}{r} 8 \overline{) 279} \\ \underline{-24} \phantom{0} \\ 39 \\ \underline{-32} \\ 7 \end{array}$$
$$\begin{array}{r} 31 \\ \times 9 \\ \hline 279 \end{array}$$

$$4) \frac{1}{4} \div \frac{2}{9}$$

$$\frac{1}{4} \cdot \frac{9}{2} = \frac{9}{8} = 1\frac{1}{8}$$

$$5) 1\frac{5}{6} \div 2\frac{1}{4}$$

$$\frac{11}{6} \div \frac{9}{4}$$

$$\frac{11}{\cancel{6}_3} \cdot \frac{4}{9} = \frac{22}{27}$$

$$6) 3\frac{2}{3} \div 5$$



