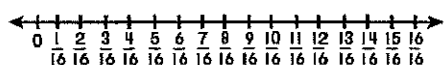
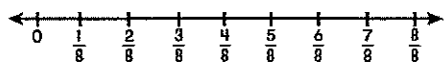
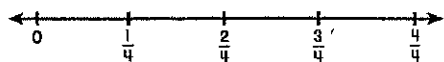
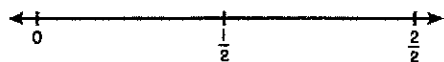


Calculations with Decimals and Fractions

Fractions

The imperial system is usually divided into fractions of an inch (eg. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$)



When comparing values it is useful to convert all fractions to a common denominator.

Multiply top and bottom by the same number (eg. $\frac{2}{2}$) This does not change the value of the fraction, only how is is represented, since $\frac{2}{2} = 1$.

Example: Arrange in order from smallest to biggest.

$\boxed{1\frac{3}{8}}$, $\boxed{\frac{5}{16}}$, $\boxed{1\frac{1}{4}}$, $\boxed{\frac{1}{2}}$, $\boxed{\frac{9}{32}}$, $\boxed{1}$

$\frac{9}{32}$, $\frac{10}{32}$, $\frac{16}{32}$, 1 , $1\frac{2}{8}$, $1\frac{3}{8}$

$\frac{9}{32}$, $\frac{5}{16}$, $\frac{1}{2}$, 1 , $1\frac{1}{4}$, $1\frac{3}{8}$

Adding and Subtracting Fractions

When adding and subtracting fractions you must first find equivalent fractions with a common denominator.

Example:

1. $\frac{1}{4} + \frac{3}{8}$

$\times \frac{2}{2}$

$\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

2. $\frac{5}{8} + \frac{3}{16}$

$\times \frac{2}{2}$

$\frac{10}{16} + \frac{3}{16} = \frac{13}{16}$

3. $2\frac{1}{8} + \frac{3}{4}$

$\times \frac{2}{2}$

$2\frac{2}{8} + \frac{6}{8} = 2\frac{7}{8}$

Practice:

1. $\frac{1}{8} + \frac{5}{16}$

$\times \frac{2}{2}$

$\frac{2}{16} + \frac{5}{16} = \frac{7}{16}$

2. $\frac{6}{8} - \frac{6}{16}$

$\times \frac{2}{2}$

$\frac{6}{8} - \frac{3}{8} = \frac{3}{8}$

3. $4\frac{1}{4} + 3\frac{5}{8}$

$\times \frac{2}{2}$

$4\frac{2}{8} + 3\frac{5}{8} = 7\frac{7}{8}$

Multiplying and Dividing Fractions

To multiply fractions it is as simple as multiplying numerator by numerator and denominator by denominator. Reduce the resultant fraction to lowest terms.

Example:

$$1. \quad \frac{1}{4} \times \frac{3}{8} = \frac{3}{32}$$

$$2. \quad \frac{3}{4} \times \frac{2}{8} = \frac{6}{32} = \frac{3}{16}$$

$$3. \quad \frac{2}{16} \times \frac{1}{2}$$

$$\frac{32+7}{16}$$

$$\frac{39}{16} \times \frac{1}{2} = \frac{39}{32} = 1\frac{7}{32}$$

To divide fractions take the inverse of the second fraction and multiply (keep, change, flip) Reduce the resultant fraction to lowest terms.

Example:

$$1. \quad \frac{3}{8} \div \frac{1}{16}$$

$$2. \quad \frac{5}{8} \div \frac{3}{32}$$

$$3. \quad 3\frac{2}{4} \div \frac{9}{16}$$

$$\frac{3}{8} \times \frac{16}{1} = \frac{48}{8} = 6$$

$$\frac{5}{8} \times \frac{32}{3} = \frac{160}{24} = \frac{20}{3}$$

$$3\frac{2}{4} \div \frac{9}{16} = 6\frac{2}{3} \times \frac{16}{9} = \frac{224}{9} = 24\frac{8}{9}$$

Sometimes it is possible to reduce a fraction before performing a multiplication.

Example:

• = X

$$1. \quad \frac{5}{8} \times \frac{8}{32} = \frac{5 \cdot 8}{8 \cdot 32} = \frac{8 \cdot 5}{8 \cdot 32} = \frac{1}{8} \times \frac{5}{32} = \frac{5}{32}$$

↑ "cancel"

$$2. \quad \frac{24}{16} \div \frac{3}{16} = \frac{24}{16} \times \frac{16}{3} = \frac{24}{3} = 8$$

pg 70-71 # 3, 4, 6
73 # 1-3
+ Measurement
assignment
+ extras (inc)