

## F Michaelmas Fractions

1. Evaluate the following (don't forget BIDMAS):

(a)  $3\frac{1}{3} + 2\frac{1}{9}$ .

$\frac{49}{9}$

(l)  $(\frac{2}{3})^2 + 2\frac{1}{3}$ .

$\frac{25}{9}$

(b)  $2\frac{3}{8} - 1\frac{2}{5}$ .

$\frac{39}{40}$

(m)  $(1\frac{2}{3})^2 - (2\frac{1}{2})^2$ .

$-\frac{125}{36}$

(c)  $5 \times 4\frac{1}{3}$ .

$\frac{65}{3}$

(n)  $\frac{1}{2\frac{1}{3} - 1\frac{3}{7}}$ .

$\frac{21}{19}$

(d)  $4\frac{2}{3} \div 3\frac{3}{5}$ .

$\frac{35}{27}$

(o)  $4 - \frac{3}{1\frac{3}{4}}$ .

$\frac{16}{7}$

(f)  $\frac{3}{4} \div 2$ .

$-\frac{7}{4}$

(p)  $\frac{4}{7} + \frac{2\frac{1}{2}}{5\frac{1}{4}}$ .

$\frac{22}{21}$

(g)  $1\frac{3}{10} - 3\frac{1}{20}$ .

$\frac{9}{5}$

(q)  $\frac{\frac{3}{4} \times \frac{2}{3}}{\frac{2}{3} \div \frac{4}{5}} - \frac{1}{7}$ .

$\frac{16}{35}$

(h)  $5 \div 2\frac{7}{9}$ .

$\frac{352}{7}$

(r)  $\frac{\frac{1}{2} + \frac{2}{3}}{2\frac{3}{5} - 1\frac{1}{7}} - \frac{1}{1\frac{4}{5} - \frac{1}{10}}$ .

$\frac{65}{306}$

(i)  $6\frac{2}{7} \times 8$ .

$\frac{171}{20}$

(j)  $4\frac{3}{4} + 2\frac{1}{9} \times 1\frac{4}{5}$ .

$\frac{115}{9}$

(s)  $2017\frac{3}{4} - 2015\frac{1}{6}$ .

□

2. Evaluate the following algebraic fractions. Just remember to think about what you would do with a given number and do the same with the letter. For example

$$2\frac{1}{3} = \frac{2 \times 3 + 1}{3} = \frac{7}{3},$$

$$a\frac{3}{4} = \frac{a \times 4 + 3}{4} = \frac{4a + 3}{4}.$$

(a)  $\frac{1}{a} + \frac{2}{3}$ .

$\frac{3+2a}{3a}$

(h)  $a\frac{1}{a} \div \frac{4}{5}$ .

$\frac{5a^2+5}{4a}$

(b)  $\frac{a}{3} - \frac{4}{5}$ .

$\frac{5a-12}{15}$

(i)  $1\frac{3}{a} \times 4\frac{1}{a}$ .

$\frac{4a^2+13a+3}{a^2}$

(c)  $a \times 1\frac{4}{5}$ .

$\frac{9a}{5}$

(j)  $1 + \frac{a}{2} + \frac{2}{a}$ .

$\frac{a^2+2a+4}{2a}$

(d)  $3\frac{1}{a} \times \frac{a}{7}$ .

$\frac{3a+1}{7}$

(k)  $\frac{a}{2} \times \frac{1}{3} + \frac{2}{a} \div \frac{3}{a}$ .

$\frac{a+4}{6}$

(e)  $\frac{6}{7} \div \frac{a}{2}$ .

$\frac{12}{7a}$

(l)  $\frac{a}{b} + \frac{b}{a} \times \frac{b}{c}$ .

$\frac{a^2c+b^3}{abc}$

(f)  $a\frac{1}{2} + \frac{1}{3}$ .

$\frac{6a+5}{6}$

(m)  $a\frac{b}{c} + d\frac{e}{f}$ .

$\frac{acdf+ace+ddf+be}{cf}$

(g)  $3\frac{1}{3} - a\frac{1}{4}$ .

$\frac{37-12a}{12}$

(n)  $\frac{\frac{2}{3}}{2\frac{1}{a}} + \frac{1}{a}$ .

$\frac{2a^2+6a+3}{6a^2+3a}$

3. Find  $(1 + \frac{1}{2})(1 + \frac{1}{3})(1 + \frac{1}{4})(1 + \frac{1}{5}) \cdots (1 + \frac{1}{1000})$ .