

Railway Engineering Mathematics

Tutorial Sheet 1

1. BIDMAS and order of operations

Evaluate the following:

(a) $2 \times 5 + 7$

(f) $5 + 2^2 \times 3$

(b) $2 \times (5 + 7)$

(g) $5 \times 2 - 4 \div 2$

(c) $24 - 6 \div 2$

(h) $(3 + 2)^2$

(d) $3 + 4 \times (7 + 1)$

(i) $(5 + 4)^2 \times 4 \div 2$

(e) $(3 + 4) \times 7 + 1$

(j) $4 \times 2^2 - 12 \div 4$

2. Adding and subtracting fractions

Evaluate the following:

(a) $\frac{1}{2} + \frac{1}{5}$

(e) $2\frac{3}{5} - \frac{4}{3}$

(b) $\frac{2}{3} + \frac{5}{9}$

(f) $3\frac{2}{3} - 1\frac{1}{4}$

(c) $\frac{2}{7} + \frac{3}{4}$

(g) $1\frac{1}{2} - \frac{7}{10}$

(d) $\frac{1}{2} + \frac{1}{3} + \frac{1}{4}$

(h) $4\frac{1}{4} - \frac{2}{5} - \frac{1}{8}$

3. Multiplying fractions

Evaluate the following:

(a) $\frac{3}{5} \times \frac{2}{7}$

(b) $\frac{1}{8} \times \frac{5}{6}$

(c) $6 \times \frac{2}{5}$

(d) $2 \times \frac{5}{9}$

(e) $4 \times \frac{3}{10}$

(f) $\frac{3}{4} \times \frac{7}{11}$

(g) $\frac{3}{5} \times \frac{10}{12}$

(h) $2\frac{1}{5} \times 3\frac{2}{3}$

4. Dividing fractions

Evaluate the following:

(a) $\frac{1}{5} \div 2$

(b) $\frac{1}{6} \div 4$

(c) $\frac{1}{4} \div \frac{1}{2}$

(d) $\frac{1}{3} \div \frac{1}{3}$

(e) $2 \div \frac{1}{5}$

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

(g) $\frac{3}{5} \div \frac{1}{2}$

(h) $\frac{3}{7} \div \frac{2}{9}$

(i) $\frac{6}{7} \div \frac{7}{12}$

(j) $2\frac{1}{10} \div 1\frac{1}{8}$

(k) $5\frac{1}{4} \div \frac{3}{8}$

(l) $1\frac{1}{3} \div 3\frac{1}{4}$