

Lesson 2

GCSE Mathematics Algebra, Rearranging Formulae

2.1 Reciprocal

The reciprocal of $\frac{4}{7}$ is $\frac{7}{4}$

The reciprocal of $\frac{6}{x}$ is $\frac{x}{6}$

The reciprocal of $\frac{1}{2}$ is $\frac{2}{1}$ (which you could write as just 2)

2.2 Quick Questions

Remembering to

“DO THE SAME TO THE WHOLE OF BOTH SIDES”

write down the reciprocal of,

(i) $\frac{8}{3}$

(ii) $\frac{7}{x}$

(iii) $\frac{1}{7}$

(iv) $\frac{13}{x}$

(v) $\frac{x}{5}$

(vi) $\frac{3x}{2}$

(vii) $\frac{8e}{11}$

(viii) $\frac{w}{3x}$

(ix) $\frac{m}{4pw}$

(x) 4

(xi) x

(xii) $8m$

(xiii) $\frac{4}{p + q}$

(xiv) $\frac{1}{m^2 + n}$

(xv) $a + b$

2.3 Taking the reciprocal of both sides

Example

Showing full working, make x the subject;

$$\frac{3}{5x} + 2m = p$$

2.4 Exercise

Question 1

Showing full working, make x the subject;

$$\frac{1}{x} - c = 5ab$$

Question 2

Showing full working, make x the subject;

$$\frac{7}{x} + 2pq = w$$

Question 3

Showing full working, make x the subject;

$$\frac{5k}{x} + z = 6$$

Question 4

Showing full working, by first taking the reciprocal of both sides, make x the subject;

$$\frac{1}{x + 3p} = \frac{4zk}{7m}$$

Question 5

Showing full working, by first adding 11 to both sides, make x the subject;

$$\frac{2 + w}{x} - 11 = k$$

Question 6

Showing full working, by first taking the reciprocal of both sides, make x the subject;

$$\frac{1}{x(2w + v)} = m^2$$

Question 7

Showing full working, by first subtracting $5u$ from both sides, make x the subject;

$$\frac{8}{7x} + 5u = 2g$$