Lesson 6

GCSE Mathematics
Algebra, Rearranging Formulae

6.1 Squares and Square Roots

In algebra, there is one golden rule for manipulating all equations
DO THE SAME TO THE WHOLE OF BOTH SIDES

The list of actions that can be done to both sides includes

- Square both sides
- Square root both sides

6.2 Square both sides Example

Showing full working, make x the subject of the formula

$$\frac{\sqrt{x+3}}{4} = g$$

6.3 Square Root both side Example

Showing full working, make x the subject of the formula

$$\frac{x^2 + k}{2m} = f$$

6.4 Exercise

Question 1

Showing full working, make x the subject of the formula

$$\sqrt{x + w} = 5p$$

Question 2

Showing full working, make x the subject of the formula

$$x^2 + u = 2h$$

Question 3

Showing full working, make x the subject of the formula

$$\frac{1}{\sqrt{x}} = \frac{s}{3}$$

Question 4

Showing full working, make x the subject of the formula

$$\frac{1}{x^2} + 7f = h + k$$

Question 5

Showing full working, make x the subject of the formula

$$\frac{\sqrt{x+5}}{m} = 7$$

Question 6

Showing full working, make x the subject of the formula

$$\frac{x^2 - 7}{8d} = f$$

Question 7

Showing full working, make x the subject of the formula

$$7m - \sqrt{x} = 0$$

Question 8

Showing full working, make x the subject of the formula

$$\sqrt{\frac{c + p}{x}} = 4$$

Question 9

Showing full working, make x the subject of the formula

$$\frac{3m\,x^2}{p} = k$$

Question 10

Showing full working, make x the subject of the formula

$$\frac{\sqrt{x^2 + 5}}{w} = 6$$

Question 11

Showing full working, make x the subject of the formula

$$\frac{w}{g} = \frac{x^2 + m}{3 + s}$$

Question 12

Showing full working, make x the subject of the formula

$$\frac{3}{\sqrt{x + 5}} = \frac{z}{4t}$$