

Clive On Rearranging Formulae

Clive is tackling his rearranging formulae homework and knows that he's made mistakes somewhere.

Can you spot and correct the mistakes Clive has made?

Can you explain what mistakes Clive has made, and maybe give him some tips so that he (hopefully) doesn't make them again?

Question 1:

Rearrange the formula below to make x the subject:

$$y = 5x + 2$$

You must show each stage of your working.

Clive's answer:

$$y = 5x + 2$$

Divide both sides by 5:

$$\frac{y}{5} = x + 2$$

Subtract both sides 2

Answer:

$$x = \frac{y}{5} - 2$$

Your answer:

What mistake has Clive made?

Question 2:

Rearrange the formula below to make t the subject:

$$v = u + at$$

You must show each stage of your working.

Clive's answer:

$$v = u + at$$

Add u to both sides.

$$v + u = at$$

Divide both sides by a .

Answer:

$$t = \frac{v + u}{a}$$

Your answer:

What mistake has Clive made?

Question 3:

The formula to calculate the volume of a sphere is:

$$V = \frac{4}{3}\pi r^3$$

Rearrange to make r the subject, giving your answer in its simplest form.

Clive's answer:

Your answer:

$$V = \frac{4}{3}\pi r^3$$

Divide both sides by $\frac{4}{3}\pi$.

$$\frac{3V}{4\pi} = r^3$$

Remove the power.

Answer:

$$r = \sqrt{\frac{3V}{4\pi}}$$

What mistake has Clive made?

Question 4:

Make x the subject of the following formula, showing all your workings:

$$ax + by = c(y - x)$$

Clive's answer:

Your answer:

$$ax + by = c(y - x)$$

Expand the brackets.

$$ax + by = cy - cx$$

Subtract by from both sides.

$$ax = cy - cx - by$$

Divide both sides by a .

Answer:

$$x = \frac{cy - cx - by}{a}$$

What mistake has Clive made?