



# Maths-it Podcast H-09

Higher GCSE Revision

## Using Formulae

### Topics

Substituting into formulae – Rearranging formulae – Generating formulae

### Questions

1. The cost, in pounds, of hiring a ride on mower can be worked out using this rule.

Add 2 to the number of days' hire  
Multiply your answer by 7

The cost of hiring a mower for  $n$  days is  $C$  pounds.

Write down a formula for  $C$  in terms of  $n$ .

.....  
(Total 3 marks)

2. (a) Work out the value of  $6a + ab - b$  when  $a = 7$  and  $b = -5$

.....  
(2)

- (b) Work out the value of  $\frac{3t^2 - 5}{4t}$  when  $t = -5$

.....  
(3)  
(Total 5 marks)



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3.

$$s = ut + \frac{at^2}{2}$$

$$u = 5$$

$$t = 2.4$$

$$a = -10$$

(a) Work out the value of  $D$ .

..... (2)

$$s = 50$$

$$t = 2$$

$$a = -10$$

(b) Work out the value of  $u$ .

..... (2)

(c) Make  $a$  the subject of the formula

$$s = ut + \frac{at^2}{2}$$

$u =$  ..... (2)  
**(Total 6 marks)**



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4. Make  $t$  the subject of the formula

$$h = \frac{p}{2t - 3}$$

$$t = \dots\dots\dots$$

(Total 3 marks)

5.  $A = 2\pi r (r+h)$

$$A = 400$$

$$r = 5.7$$

- (a) Work out the value of  $h$ .  
Give your answer correct to 3 significant figures.

$$h = \dots\dots\dots$$

(3)

- (b) Make  $h$  the subject of the formula

$$A = 2\pi r (r+h)$$

$$r = \dots\dots\dots$$

(3)

(Total 6 marks)



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6. Make  $j$  the subject of the formula  $2(3i + j) = 4 - 5j$

$$m = \dots\dots\dots$$

(Total 3 marks)

7. For each formula, make  $x$  the subject.

(a)  $T = ax - bx$

$$m = \dots\dots\dots$$

(2)

(b)  $T = \sqrt{\frac{3-x}{c}}$

$$m = \dots\dots\dots$$

(3)

(c)  $T = 3de - 4x^2$

$$m = \dots\dots\dots$$

(3)

(Total 8 marks)



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### *Using Formulae*

8.

$$y = \sqrt{\frac{k \sin x}{a - k \cos x}}$$

$$a = 10.5$$

$$k = 6.2$$

$$x = 70$$

- (a) Calculate the value of  $y$ . Give your answer correct to 3 significant figures.

$$y = \dots\dots\dots$$

(3)

$$y = 4$$

$$k = 10$$

$$x = 45$$

- (b) Find the value of  $a$ . Give your answer correct to 3 significant figures.

$$r = \dots\dots\dots$$

(3)

(Total 6 marks)