

# Changing the Subject of a Formula

## Mark Scheme

Level	GCSE
Subject	Maths
Exam Board	Edexcel GCSE
Topic	Changing the Subject of a Formula
Grade Level	Grade 5
Booklet	Mark Scheme

**Time Allowed:** 37 minutes

**Score:** /31

**Percentage:** /100

**Grade Boundaries:**

1. Make  $p$  the subject of the formula  $m = 3n + 2p$

$$m - 3n = 2p$$
$$p = \frac{m - 3n}{2}$$

$$p = \frac{m - 3n}{2}$$

(Total 2 marks)

2. Make  $c$  the subject of the formula  $a = 3c - 4$

$$a + 4 = 3c$$
$$c = \frac{a + 4}{3}$$

$$c = \frac{a + 4}{3}$$

(Total 2 marks)

3. Make  $b$  the subject of the formula  $P = 2a + 2b$

$$P - 2a = 2b$$
$$b = \frac{P - 2a}{2}$$

$$b = \frac{P - 2a}{2}$$

(Total 2 marks)

4. Make  $c$  the subject of the formula  $f = 3c - 4$

$$f + 4 = 3c$$
$$c = \frac{f + 4}{3}$$

$$c = \frac{f + 4}{3}$$

(Total 2 marks)

5. Make  $t$  the subject of the formula

$$u = 7t + 30$$
$$u - 30 = 7t$$
$$t = \frac{u - 30}{7}$$

$$t = \frac{u - 30}{7}$$

(Total 2 marks)

6. Make  $t$  the subject of the formula  $v = u + 5t$

$$v - u = 5t$$
$$t = \frac{v - u}{5}$$

$$t = \frac{v - u}{5}$$

(Total 2 marks)

7. Make  $y$  the subject of the formula

$$x = 3y + 2$$

$$x - 2 = 3y$$
$$y = \frac{x - 2}{3}$$

$$y = \frac{x - 2}{3}$$

.....

(Total 2 marks)

8. Rearrange

$y = \frac{1}{2}x + 1$  to make  $x$  the subject.

$$2y = x + 2$$

$$2y - 2 = x$$

$$x = 2y - 2$$

.....

(Total 2 marks)

9. Make  $a$  the subject of the formula

$$s = \frac{a}{4} + 8u$$

$$4s = a + 32u$$

$$a = 4s - 32u$$

$$a = \frac{4s - 32u}{\dots\dots\dots}$$

(Total 2 marks)

10. Make  $u$  the subject of the formula

$$D = ut + kt^2$$

$$D - kt^2 = ut$$

$$u = \frac{D - kt^2}{t}$$

$$\frac{D - kt^2}{t}$$

$$u = \frac{D - kt^2}{t}$$

(Total 2 marks)

11. Make  $s$  the subject of the formula  $v^2 = u^2 + 2as$

$$v^2 - u^2 = 2as$$

$$s = \frac{v^2 - u^2}{2a}$$

$$\frac{v^2 - u^2}{2a}$$

$$s = \frac{v^2 - u^2}{2a}$$

(Total 2 marks)

12. Make  $t$  the subject of the formula

$$2(t - 5) = y$$

$$2t - 10 = y$$

$$2t = y + 10$$

$$t = \frac{y + 10}{2}$$

$$t = \frac{y + 10}{2}$$

(Total 3 marks)

13. Make  $n$  the subject of the formula  $m = 5n - 21$

$$m + 21 = 5n$$

$$n = \frac{m + 21}{5}$$

$$n = \frac{m + 21}{5}$$

(Total 2 marks)

14. Make  $q$  the subject of the formula  $P = 2q + 10$

$$P - 10 = 2q$$

$$q = \frac{P - 10}{2}$$

$$q = \frac{P - 10}{2}$$

(Total 2 marks)

15. When you are  $h$  feet above sea level, you can see  $d$  miles to the horizon, where

$$d = \sqrt{\frac{3h}{2}}$$

Make  $h$  the subject of the formula

$$d = \sqrt{\frac{3h}{2}}$$

$$d^2 = \frac{3h}{2}$$

$$2d^2 = 3h$$

$$\frac{2d^2}{3} = h$$

$$h = \frac{2d^2}{3}$$

(Total 2 marks)