Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics

ALGEBRA: CHANGING THE SUBJECT

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

Advice:

- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

NO CALCULATOR ALLOWED

NAME:	

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

$2p = m - 3n$

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

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

(Total 2 marks)

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

$3c = a + 4$

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

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

(Total 2 marks)

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

$2b = P - 2a$

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

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

(Total 2 marks)

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

$3c = f + 4$

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

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

(Total 2 marks)

5. Make t the subject of the formula $u = 7t + 30$

$7t = u - 30$

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

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

(Total 2 marks)

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

$5t = v - u$

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

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

(Total 2 marks)

7. Make y the subject of the formula $x = 3y + 2$

$3y = x - 2$

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

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

(Total 2 marks)

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

$\frac{1}{2}x = y - 1$

$x = 2(y - 1)$

$x = 2y - 2$

$x = 2y - 2$

(Total 2 marks)

9. Make a the subject of the formula $s = \frac{a}{4} + 8u$

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

$a = 4(s - 8u)$

$a = 4s - 32u$

$a = 4s - 32u$

(Total 2 marks)

10. Make u the subject of the formula $D = ut + kt^2$

$ut = D - kt^2$

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

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

(Total 2 marks)

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

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

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

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

(Total 2 marks)

12. Make t the subject of the formula $2(t - 5) = y$

$2t - 10 = y$

$2t = y + 10$

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

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

(Total 3 marks)

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

$5n = m + 21$

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

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

(Total 2 marks)

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

$2q = P - 10$

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

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

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

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

$3h = 2d^2$

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

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

(Total 2 marks)