GCSE Maths: Changing the subject: one step and two steps (Foundation): worksheet

GCSE Maths - Substitution and Formulae - Foundation - Lesson 8.6

Name: _____ Date: _____ Score: _____

14 questions. Write your answers in the spaces. Answers and step-by-step help are free at **websink.site/gcse/maths/ch08-substitution-formulae/foundation/changing-the-subject-one-step-and-two-steps/**

Exercise 8G Changing the subject: one and two steps (Non-calculator)

1 Make x the subject of each formula.

(a) Make x the subject of $y = x + 5$

Answer:

(b) Make x the subject of $y = x - 3$

Answer:

(c) Make x the subject of $y = 4x$

Answer:

(d) Make x the subject of $y = \frac{x}{3}$

Answer:

(e) Make x the subject of $y = x + a$

Answer:

(f) Make x the subject of $y = kx$

Answer:

2 Make x the subject of each formula.

(a) Make x the subject of $y = 2x + 3$

Answer:

(b) Make x the subject of $y = 5x - 4$

Answer:

(c) Make x the subject of $y = \frac{x}{2} + 1$

Answer:

(d) Make x the subject of $y = \frac{x}{4} - 2$

Answer:

(e) Make x the subject of $y = 7 + 3x$

Answer:

(f) Make x the subject of $y = 2x - 9$

Answer:

3 **Rearrange each formula to make the letter in brackets the subject.**

(a) Make a the subject of $F = ma$

Answer:

(b) Make m the subject of $F = ma$

Answer:

(c) Make I the subject of $V = IR$

Answer:

(d) Make R the subject of $V = IR$

Answer:

(e) Make d the subject of $s = \frac{d}{t}$

Answer:

(f) Make t the subject of $s = \frac{d}{t}$

Answer:

4 **Make the letter shown the subject.**

(a) Make u the subject of $v = u + at$

Answer:

(b) Make a the subject of $v = u + at$

Answer:

(c) Make d the subject of $C = \pi d$

Answer:

(d) Make h the subject of $A = \frac{1}{2}bh$

Answer:

(e) Make w the subject of $P = 2l + 2w$

Answer:

(f) Make s the subject of $P = 4s$

Answer:

5 **Make x the subject of each formula.**

(a) Make x the subject of $y = mx + c$

Answer:

(b) Make m the subject of $y = mx + c$

Answer:

(c) Make c the subject of $y = mx + c$

Answer:

6 **Callum is asked to make x the subject of $y = 3x + 2$. He writes $x = y - \frac{2}{3}$. Use $x = 5$ to show that he is wrong, and give the correct answer.**

Answer:

7 **The cost, £C, of hiring a van for d days is $C = 35d + 20$.**

(a) Make d the subject of the formula.

Answer:

(b) Use your formula to find how many days the van was hired for when the cost was £195.

Answer:

8 **The area of a triangle is $A = \frac{1}{2}bh$.**

(a) Make h the subject of the formula.

Answer:

(b) A triangle has area 30 cm^2 and base 12 cm. Work out its height.

Answer:

9 **A car has mass m kg and a force of F newtons acts on it. The acceleration a m/s^2 is given by $F = ma$.**

(a) Make a the subject of the formula.

Answer:

(b) Work out a when $F = 3000$ and $m = 1200$.

Answer:

10 **A train travels a distance d km at an average speed s km/h. It takes t hours, where $s = d/t$.**

(a) Make t the subject.

Answer:

(b) How long does a journey of 360 km take at an average speed of 90 km/h?

Answer:

11 **The simple interest, I, earned on a sum of money P at R% a year for T years is $I = \frac{PRT}{100}$. Make P the subject.**

Answer:

12 **Make y the subject of each formula.**

(a) Make y the subject of $x = 2y + 1$

Answer:

(b) Make y the subject of $x = \frac{y}{5} - 3$

Answer:

(c) Make y the subject of $a = 3y - b$

Answer:

(d) Make y the subject of $p = q + 4y$

Answer:

13 **The cooking time T minutes for a turkey of mass m kg is $T = 40m + 20$. Jess cooks a turkey for 180 minutes. Make m the subject and work out the mass of her turkey.**

(a) Make m the subject.

Answer:

(b) Work out m when $T = 180$.

Answer:

14 Starting from $s = d/t$, show that $d = st$.

Answer:

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