

GCSE Maths: Higher: the subject appears twice (Higher): worksheet

GCSE Maths - Substitution and Formulae - Higher - Lesson 8.8

Name: _____

Date: _____

Score: _____

12 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch08-substitution-formulae/higher/higher-the-subject-appears-twice/

Exercise 8I Subject appears twice Non-calculator

1 Make x the subject of each formula.

- (a) Make x the subject of $px + q = rx + s$

Answer:

- (b) Make x the subject of $b + ax = d + cx$

Answer:

- (c) Make x the subject of $mx + k = nx + t$

Answer:

2 Expand the brackets, then make x the subject.

- (a) Make x the subject of $p(x + q) = r(x + s)$

Answer:

- (b) Make x the subject of $a(x + b) = c(x + d)$

Answer:

3 Make x the subject of each formula.

- (a) Make x the subject of $y = \frac{ax + b}{x}$

Answer:

- (b) Make x the subject of $y = \frac{px + q}{x}$

Answer:

- (c) Make x the subject of $T = x + kx$

Answer:

4 Make x the subject of each formula.

- (a) Make x the subject of $y = \frac{x + 3}{x - 2}$

Answer:

- (b) Make x the subject of $y = \frac{x + 5}{x - 1}$

Answer:

- (c) Make x the subject of $y = \frac{x + p}{x - q}$

Answer:

5 Make x the subject of each formula.

(a) Make x the subject of $y = \frac{ax + b}{cx + d}$

Answer:

(b) Make x the subject of $y = \frac{px + q}{rx + s}$

Answer:

6 Make x the subject of each formula.

(a) Make x the subject of $ax^2 + b = cx^2 + d$

Answer:

(b) Make x the subject of $px^2 + q = rx^2 + s$

Answer:

7 Make n the subject.

(a) Make n the subject of $a + bn = c + dn$

Answer:

8 Firm A charges £ a plus £ b per mile and Firm B charges £ c plus £ d per mile. The two firms charge the same for n miles when $a + bn = c + dn$.

(a) Make n the subject of $a + bn = c + dn$.

Answer:

(b)

Firm A charges £30 plus £4 per mile. Firm B charges £12 plus £7 per mile. For what distance do they charge the same?

Answer:

9 Make x the subject of $\frac{x}{a} + \frac{x}{b} = c$.

Answer:

10 Ali is asked to make x the subject of $xy - x = 3$. He writes $x(y - 1) = 3$ and then $x - 1 = \frac{3}{y}$. Explain his mistake and give the correct answer.

Answer:

11 The lens formula is $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$. Make v the subject.

Answer:

12 (a) Make x the subject of $y = \frac{x+1}{x-1}$. (b) What do you notice about your answer? Use $x = 3$ to explain.

(a) Make x the subject

Answer:

(b) What do you notice?

Answer: