Rearranging Formulae

GCSE Maths · Foundation tier · 16 questions · 37 marks

Name _____ Date _____ Score _____ / 37

Start at Level 1 and climb. Stuck? The worked answers show every step.

Level 1 · Warm-up | Level 2 · Build | Level 3 · Exam-style | Level 4 · Challenge (Foundation)

Level 1 · Warm-up

9 marks

One or two steps: adding, subtracting, multiplying and dividing.

1 Make t the subject of $v = u + at$. [2 marks]

Answer _____

2 Make x the subject of $y = 4x - 3$. [2 marks]

Answer _____

3 Make r the subject of $C = 2\pi r$. [1 mark]

Answer _____

4 Make h the subject of $A = \frac{1}{2}bh$. [2 marks]

Answer _____

5 Make m the subject of $P = 3m + 2n$. [2 marks]

Answer _____

Level 2 · Build 9 marks
Fractions and negatives, and a first look at squares and roots.

6 Make x the subject of $y = \dfrac{x + 5}{2}$. [2 marks]

Answer _____

7 Make v the subject of $s = \frac{1}{2}(u + v)t$. [3 marks]

Answer _____

8 Make x the subject of $y = 7 - 2x$. [2 marks]

Answer _____

9 Make c the subject of $a = b - 3c$. [2 marks]

Answer _____

Level 3 · Exam-style 10 marks
Formulae in context, using your rearranged formula, and spotting mistakes.

10 (a) The formula $F = \frac{9C}{5} + 32$ converts a temperature in degrees Celsius, C, to degrees Fahrenheit, F. Make C the subject of the formula. [2 marks]

Answer _____

(b) Use your formula to convert $77°$F to degrees Celsius. [1 mark]

Answer _____

11 (a) The cost, C pounds, of hiring a van for d days is $C = 45 + 30d$. Make d the subject of the formula. [2 marks]

Answer _____

(b) Hal paid £195 to hire a van. For how many days did he hire it? [1 mark]

Answer _____

12 Ravi makes x the subject of $y = 3x + 5$ and writes $x = \frac{y}{3} - 5$. Explain Ravi's mistake, and write down the correct answer. [2 marks]

Answer _____

13 The kinetic energy of a moving object is $E = \frac{1}{2}mv^2$. Make m the subject of the formula. [2 marks]

Answer _____

Level 4 · Challenge (Foundation) 9 marks
Grade 4–5 problem solving: rearranging real formulae and then using them.

14 (a) The time, T minutes, to roast a chicken weighing W kg is $T = 40W + 20$. Make W the subject of the formula. [2 marks]

Answer _____

(b) A chicken takes 2 hours to roast. Work out its weight. [2 marks]

Answer _____

15 (a) Make m the subject of $y = mx + c$. [2 marks]

Answer _____

(b) Work out the value of m when $y = 17$, $x = 4$ and $c = 5$. [1 mark]

Answer _____

16 The area of a trapezium is $A = \frac{1}{2}(a+b)h$. Make h the subject of the formula. [2 marks]

Answer _____