

Forming and Solving Equations

discia.org · 10 questions · 38 marks

NAME _____

DATE _____

- 1 Amara and Ben share 112 counters between them.

 EITHER PAPER 4 MARKS

Ben gets 22 more counters than Amara.

Amara gets x counters.

- (a) Write down an equation in terms of x .
- (b) Solve your equation to find the value of x .
- (c) Write down how many counters Ben gets.

-
- 2 Four positive whole numbers add up to 84.

 EITHER PAPER 3 MARKS

One of the numbers is a multiple of 20.

The other three numbers are equal.

What are the four numbers?

-
- 3 Multiplying y by 5 gives the same result as adding 20 to y .

 EITHER PAPER 3 MARKS

- (a) Write this as an equation.
- (b) Show that the value of y is not 4.

-
- 4 The sum of three consecutive odd numbers is 51.

 EITHER PAPER 3 MARKS

Work out the three numbers.

- 5 The three sides of a triangle have lengths $2x + 9$ cm, $3x - 2$ cm and $x + 3$ cm. EITHER PAPER 4 MARKS

The perimeter of the triangle is 40 cm.

- (a) Find the value of x .
(b) Write down the length of the longest side of the triangle.

-
- 6 $2a + 2b = 9$ and $16x + 16y = 136$ EITHER PAPER 2 MARKS

Show that $8a + 8b$ has a greater value than $4x + 4y$.

-
- 7 Marcus buys 4 metres of linen at £13.10 per metre. EITHER PAPER 6 MARKS

He also buys 6 metres of cotton.

The total cost is £112.40.

- (a) Work out the cost of one metre of cotton.
(b) Buttons cost 53p each.

The greatest number of buttons Marcus can buy with £9 is 16.

Marcus says, "The greatest number of buttons I can buy with £18 is 32 because £18 is double £9."

Is Marcus correct?

You must show your working.

8 Kofi is twice as old as Ella.

 EITHER PAPER 4 MARKS

In 8 years' time the sum of their two ages will be 61.

Work out how old Ella is now.

9 £195 is shared between Maya, Nico and Orla.

 EITHER PAPER 4 MARKS

Nico gets three times as much as Maya.

Orla gets £10 more than Maya.

Work out how much Nico gets.

10 Beacon and Kingsway are two swimming clubs.

 EITHER PAPER 5 MARKS

Beacon charges a joining fee of £60 and then £21 for each month of membership.

Kingsway charges a joining fee of £108 and then £17 for each month of membership.

(a) Calculate the number of months for which the total cost at Beacon is the same as the total cost at Kingsway.

(b) Work out that total cost.

1	(a) $2x + 22 = 112$ (b) 45 (c) 67	2	8, 8, 8 and 60
3	(a) $5y = y + 20$ (b) When $y = 4$, the left side is 20 and the right side is 24. These are not equal, so y is not 4.	4	15, 17 and 19
5	(a) 5 (b) 19 cm	6	$8a + 8b = 36$ and $4x + 4y = 34$, so $36 > 34$
7	(a) £10.00 (b) No: with £18 Marcus can buy 33 buttons, and $2 \times 16 = 32$, which is not equal to 33	8	15 years
9	£111	10	(a) 12 months (b) £312