




Countdown to your final Maths exam ...

Crossover ... Part 6 (2020)

	Marks	Actual	  
Q1. Simplifying expressions (Clip 22) / Solving equations	4		
Q2. Proportional reasoning	2		
Q3. Index Laws (Clip 21)	3		
Q4. Simplifying expressions (Clip 22) / Solving equations	5		
Q5. Proportion – recipes (Clip 18)	6		
Q6. Powers / Roots / Product of primes (Clip 6)	6		
Q7. Simplifying expressions (Clip 22)	2		
Q8. Proportion – recipes (Clip 18)	6		
Q9. Simplifying expressions (Clip 22)	4		
Q10. Simplifying expressions (Clip 22) / Solving equations	9		
Q11. Proportion – recipes (Clip 18) / Ratio	6		
Q12. Index Laws (Clip 21) / Solving equations	3		

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NON-CALCULATOR UNLESS SPECIFIED



Questions

Q1. (a) Simplify $4m + 2m - m$

(1)

(b) Simplify $5p \times 7$

(1)

(c) Solve $8g = 40$

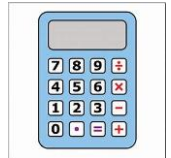
(1)

(d) Solve $19 - k = 4$

(1)

Q2. The total weight of 3 cans of soup and 5 jars of peppers is 4.1 kg.
The total weight of 4 cans of soup is 0.8 kg.

Work out the weight of 1 jar of peppers.



(2)

Q3. (a) Simplify $c^4 \times c^3$

(1)

(b) $\frac{y^3 \times y^n}{y} = y^6$ Find the value of n .

(2)

Q4. (a) Simplify $6e \times 2f$

(1)

(b) Simplify $5m + 7k - 2m + k$

(2)

(c) Solve $5y + 3 = 14$

(2)

Q5. Here is a list of ingredients for making
Apple and Raspberry Crumble for 6 people.

Apple and Raspberry Crumble

Ingredients for 6 people

120 grams	plain flour
230 grams	apples
200 grams	raspberries
160 grams	soft brown sugar
90 grams	butter

(a) Sam wants to make Apple and Raspberry Crumble for 15 people. She has enough plain flour, soft brown sugar and butter. Work out the amount of apples and the amount of raspberries Sam needs.

(3)

- (b) Find the fraction of the total weight of ingredients for 6 people that is soft brown sugar.
Give your answer in its simplest form.

Q6. (a) Write down the cube root of 64 **(3)**

(b) Calculate the value of $2^3 \times 4^5$ **(1)**

(c) Express 600 as a product of powers of its prime factors. Show your working clearly. **(2)**

Q7. Simplify $5c + 6d - 3c - 5d$ **(3)**

(2)

Q8. Here is a list of the ingredients needed to make leek and potato soup for 6 people.

Leek and Potato Soup
Ingredients for 6 people
900 ml chicken stock
900 ml water
750 g leeks
350 g potatoes
350 g onions



(a) Find the ratio of the weight of leeks to the weight of potatoes. Give your ratio in its simplest form. **(2)**

(b) Ainsley wants to make leek and potato soup for 13 people. Work out the amount of chicken stock he needs. **(2)**

(c) Delia makes leek and potato soup for a group of people. She uses 1250 g of leeks. **(2)**

Work out the number of people in the group. **(2)**

Q9. (a) Simplify $8e + 2f - 11e + 3f$ **(2)**

(b) Expand $2y(3y - 7)$ **(2)**

Q10. a) Simplify (i) $t + t + t$ **(2)**

(ii) $b \times 5 \times a$ **(2)**

(b) Solve

(i) $8x - 3 = 9$

(ii) $7y - 6 = 2y + 8$ Show clear algebraic working.

(c) Expand and simplify $(x - 6)(x + 9)$

(5)

(2)

Q11. Here is a list of ingredients needed to make 16 cookies.

Ingredients for 16 cookies
120 g butter
150 g sugar
240 g flour
170 g chocolate
1 egg

(a) Max wants to make 40 cookies.

How much flour does Max need?

(2)

Abby made cookies to sell at a school fair.
She used 600 g of butter.

(b) How many cookies did she make?

(2)

(c) Find the ratio of the weight of sugar to the weight of flour in the list of ingredients. Give your answer in the form $1:n$

(2)

Q12. (a) Simplify $\frac{y^8}{y^3}$

(1)

(b) Solve the inequality $4(x + 3) > 8$

(2)