

Week 6 Answers Year 6

Monday

1. Use simple formulae.

a	$a = 6, b = 7, c = 19$
b	$d = 2, e = 12, f = 4$
c	$y = 27, y = 51, y = 49$
d	£1.38 30 rubbers

3. Express missing number problems algebraically.

a	$15h + 12$
b	$p = q + 8$ and $p - 8 = q$
c	All must be ringed

5. Enumerate possibilities of combinations of two variables

	$21 + 9 = 30$ $22 + 9 = 31$										
	<table border="1"> <thead> <tr> <th>Value of a</th> <th>Value of b</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>11</td> </tr> <tr> <td>6</td> <td>17</td> </tr> <tr> <td>10</td> <td>25</td> </tr> <tr> <td>18</td> <td>41</td> </tr> </tbody> </table>	Value of a	Value of b	3	11	6	17	10	25	18	41
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3	11										
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2. Generate and describe linear number sequences.

a	84, 93																	
b	63																	
c	45, 49																	
d	<table border="1"> <thead> <tr> <th>term</th> <th>calculation</th> <th>value</th> </tr> </thead> <tbody> <tr> <td>1st</td> <td>$3 \times 1 - 7$</td> <td>-4</td> </tr> <tr> <td>5th</td> <td>$4 \times 5 + 9$</td> <td>29</td> </tr> <tr> <td>10th</td> <td>$4 \times 20 + 9$</td> <td>89</td> </tr> <tr> <td>25th</td> <td>$4 \times 100 + 9$</td> <td>409</td> </tr> </tbody> </table>	term	calculation	value	1st	$3 \times 1 - 7$	-4	5th	$4 \times 5 + 9$	29	10th	$4 \times 20 + 9$	89	25th	$4 \times 100 + 9$	409		
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4. Find pairs of numbers that satisfy an equation

a	$1 \times 30, 2 \times 15, 5 \times 6$
b	$1 \times 12, 2 \times 6, 3 \times 4$

Tuesday

1) For every two squares there are six circles.

The ratio of squares to circles is 2:6.

- a) 6 squares
- b) 30 circles

2) There are 10 yellow tang fish and 25 goldfish.

3) a) If we eat 9 dark chocolates, we will eat 6 milk chocolates.

b) If we eat 45 chocolates altogether we would have eaten 27 dark chocolates and 18 milk chocolates.



1) Alice's statement is incorrect. There would actually be 20 footballs if there were 12 basketballs. If there were 15 footballs, there would have to be 9 basketballs.

Hardeep's statement is correct.

2) a) False. 36p will buy her 2 strawberries. Using the ratio of 5 bananas for every two strawberries that would mean she would need to buy 5 bananas.

b) True. £2.40 will get her 10 bananas. Using the ratio 5:2 bananas to strawberries, she will need to buy 4 strawberries.

c) False. 72p will buy me 4 strawberries. If I buy 20 bananas I will need to buy 8 strawberries which will cost £1.44.

3) The first smoothie was the most expensive as he used more fruit: 20 bananas and 12 strawberries whereas smoothie one only used 15 bananas and 9 strawberries.



- 1) Ben uses the ratio 2:3 whereas Joshua uses the ratio 3:4.

Ben makes 500ml of which 200ml is orange juice and 300ml is water. Joshua makes 490ml of squash of which 210ml is orange juice and 280ml is water. Joshua used more orange juice.

- 2) a) 48 pepperoni pizzas are sold for £407.52

12 margherita pizzas are sold for £77.88

$$£407.52 + £77.88 = £485.40$$

- b) 30 margherita pizzas are sold for £194.70

20 pepperoni pizzas are sold for £169.80

10 Hawaiian pizza are sold for £78.90

Total £443.40

The restaurant made more money on Monday.

Wednesday

- 1) a) 250g bananas

100g strawberries

90g raspberries

180ml milk

40ml natural yogurt

- b) 750g bananas

300g strawberries

270g raspberries

540ml milk

120ml natural yoghurt

- c) The ingredients list could be multiplied by 4:

2000g or 2kg bananas

800g strawberries

720g raspberries

1440ml or 1.44l milk

320ml natural yogurt

- d) Freya is making a smoothie for 20 people.

- 1) a) Brilliant Bracelets sells the bracelets for £1.04 each, whereas Jewellery For You sells them for 95p each. Therefore, Jewellery For You sells them for the best price.

- b) It would cost £2.90 to buy two bracelets.

- 2) Kulijet: This statement is correct for the quantities of butter and sugar but the quantity of chocolate should be 30g, not 3g.

Hamish: This statement is correct for the quantity of flour but the quantity of chocolate should be 90g, not 60g.

Rhys: This statement is incorrect. Rhys will need to buy 3 eggs and put in 6tbsp of vanilla.

Samira: This statement is correct. 380g butter means she has enough to make the recipe for 15 people as this would require 375g butter.

- 3) a) This is false. Aron receives £3.20 a week. Over a period of 4 weeks, he would receive £12.80.

- b) Over a period of 3 weeks, Eva would get more pocket money than Mei. This is True.

Mei: $£5.80 \div 2 = £2.90$ a week

$£2.90 \times 3 = £8.70$ over 3 weeks

Eva: $£12.40 \div 4 = £3.10$ a week

$£3.10 \times 3 = £9.30$ over 3 weeks





1) a) Shop 1 gives the best price per can by 6p a can.

Shop 1 (Get 3 cans for the price of 2): $\pounds 1.80 \div 3 = 60\text{p}$ per can

Shop 2 (Get 5 cans for the price of 3): $\pounds 3.30 \div 5 = 66\text{p}$ per can

b) Shop 1 (Get 3 cans for the price of 2): $\pounds 1.80 \times 10 = \pounds 18$

Shop 2 (Get 5 cans for the price of 3): $\pounds 3.30 \times 6 = \pounds 19.80$

c) Shop 3 (6 cans for the price of 4): $\pounds 3.60 \times 5 = \pounds 18$

Shop 3 is the same price as Shop 1 and they are both the cheapest.

2) The ratio of red to green marbles in bag 1 is 3:2 whereas the ratio in bag 2 is 1:2.

Bag 2 has 10 green marbles so there must be 5 red ones. Therefore, there are 15 marbles in bag 2 and 15 marbles in bag 1.

With 15 marbles in bag 1 there will be 9 red marbles and 6 green marbles.

Thursday

Objects	Ratio	Fraction
	The ratio of black counters to white counters: 1:3	Black = $\frac{1}{4}$ White = $\frac{3}{4}$
	The ratio of apples to bananas: 1:2	Apple = $\frac{1}{3}$ Bananas = $\frac{2}{3}$
	For every 2 circles, there are 5 triangles.	Circles = $\frac{2}{7}$ Triangles = $\frac{5}{7}$
	The ratio of apples to lemons to oranges: 1:3:4	Apple = $\frac{1}{8}$ Lemons = $\frac{3}{8}$ Oranges = $\frac{4}{8}$ or $\frac{1}{2}$
	For every 2 squares, there are 3 circles and 5 triangles.	Squares = $\frac{2}{10}$ or $\frac{1}{5}$ Circles = $\frac{3}{10}$ Triangles = $\frac{5}{10}$ or $\frac{1}{2}$

2) b) is the true statement.

As $3 + 4 = 7$, there are 7 marbles altogether.

3 of the marbles are green, therefore, $\frac{3}{7}$ of the marbles are green.

1) a) Alice is correct. If $\frac{1}{4}$ of the marbles in the bag are red, $\frac{3}{4}$ will be blue. Therefore, for every 1 red marble there will be 3 blue marbles

Red	Blue	Blue	Blue
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This illustrates how $\frac{1}{4}$ of the marbles in a bag are red and $\frac{3}{4}$ are blue.

c) The ratio of red marbles to blue marbles: 1:3

2) a) This is true.

b) This is false. For every two bananas, there are five oranges.

c) This is false. The ratio of bananas to oranges: 2:5

3) a) This is true.

b) This is false. $\frac{2}{3}$ or $\frac{1}{3}$ of the fruit are now bananas.

c) This is true.

Coin	Total Value	Quantity of Coins
10p	$\pounds 2$	20
20p	$\pounds 1$	5
50p	$\pounds 5$	10

	Answer 1	Answer 2	Answer 3
Blue marbles	10	20	30
Red marbles	15	30	45
White marbles	25	50	75
Total marbles	50	100	150