

Mock to Mock Intervention Paper 2

Fractions, Decimals and Percentages – Conversions

Corbett Maths Video Support – 121 to 128

Question 1: Write these decimals as percentages

- (a) 0.31 (b) 0.16 (c) 0.22 (d) 0.06 (e) 0.02 (f) 0.8
(g) 0.4 (h) 0.185 (i) 0.204 (j) 0.092 (k) 1.24 (l) 2.8

Question 2: Write these percentages as decimals

- (a) 18% (b) 27% (c) 60% (d) 3% (e) 55% (f) 80%
(g) 1% (h) 9.2% (i) 41.5% (j) 0.8% (k) 180% (l) 315%

Question 3: Write these decimals as fractions

- (a) 0.7 (b) 0.4 (c) 0.15 (d) 0.88 (e) 0.79 (f) 0.04
(g) 0.404 (h) 0.125 (i) 0.625 (j) 0.123 (k) 1.6 (l) 2.25

Question 4: Write these fractions as decimals

- (a) $\frac{3}{10}$ (b) $\frac{3}{5}$ (c) $\frac{81}{100}$ (d) $\frac{9}{20}$ (e) $\frac{1}{8}$ (f) $\frac{19}{40}$
(g) $\frac{7}{8}$ (h) $\frac{13}{20}$ (i) $\frac{33}{50}$ (j) $\frac{19}{10}$ (k) $\frac{83}{20}$ (l) $\frac{123}{40}$

Question 5: Write these percentages as fractions

- (a) 70% (b) 60% (c) 95% (d) 24% (e) 79% (f) 82%
(g) 37.5% (h) 1.8% (i) 11.5% (j) 0.06% (k) 160% (l) 285%

Question 6: Write these fractions as percentages

- (a) $\frac{9}{10}$ (b) $\frac{1}{5}$ (c) $\frac{99}{100}$ (d) $\frac{3}{25}$ (e) $\frac{17}{20}$ (f) $\frac{7}{8}$
(g) $\frac{7}{40}$ (h) $\frac{3}{8}$ (i) $\frac{43}{50}$ (j) $\frac{123}{200}$ (k) $\frac{5}{9}$ (l) $\frac{53}{20}$

Question 7: Arrange the following in order, from smallest to largest.

- (a) $\frac{1}{4}$ 0.19 0.3 26% $\frac{1}{5}$ (b) 0.9 $\frac{17}{20}$ $\frac{4}{5}$ 88% 0.79
(c) 11% 0.2 13% $\frac{3}{20}$ $\frac{1}{8}$ (d) $\frac{2}{3}$ 65% 0.68 $\frac{7}{10}$ $\frac{5}{8}$
(e) 101% $\frac{11}{10}$ 1.2 $\frac{19}{20}$ 0.9 (f) 1.5 $\frac{5}{3}$ 82% $\frac{7}{4}$ $\frac{37}{40}$

Fraction of an Amount

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- (a) $\frac{3}{10}$ of 32 miles (b) $\frac{2}{5}$ of 9kg (c) $\frac{1}{3}$ of 8 litres (d) $\frac{3}{5}$ of £7
(e) $\frac{1}{8}$ of 50cm (f) $\frac{1}{5}$ of 4931km (g) $\frac{3}{4}$ of £57 (h) $\frac{2}{9}$ of 211km

Percentage of an Amount – *Non Calculator*

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- (a) 35% of £800 (b) 6% of 160g (c) 23% of 330cm (d) 52% of 910m
(e) 61% of 1400 (f) 7% of 640GB (g) 45% of 350g (h) 80% of 450 people
(i) 90% of 1250ml (j) 76% of £80,000 (k) 85% of 90 hours (l) 12% of £6
(m) 6% of 20 weeks (n) 11% of 6m (o) 28% of 3km (p) 71% of 4 tonnes

Percentage of an Amount – *Calculator*

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- (a) 15% of 80ml (b) 9% of 205kg (c) 45% of £135 (d) 17% of 540km
(e) 53% of 700g (f) 14% of 12 hours (g) 31% of 280kg (h) 6% of 4GB
(i) 85% of 1250ml (j) 66% of 9.4 miles (k) 97% of \$54 (l) 13% of 0.5 tonnes

Percentage Increase / Decrease

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- Oliver's salary is £18,000 and he is due to get an increase of 4%.
How much will this increase be?
- A new TV is priced at £320. In a sale it is reduced by 45%.
Calculate the sale price
- In 2000 the population of a country was 4,580,000. By 2015, the population had increased by 18%.
Work out the population in 2015.
- A vintage car was bought for £9,400. Since then the value of the car has increased by 29%.
Calculate the value of the car.
- Harriet travelled from Bath to Cardiff. Her average speed was 58 miles per hour. There is traffic on the return journey. Her average speed is reduced by 23%.
Work out the average speed on the return journey.
- Georgina needs to buy petrol for her car. Her car can hold 70 litres of petrol. There are already 20 litres of petrol in the tank. Georgina is going to fill up the petrol tank. The price of petrol is 115.9p per litre. Georgina has a voucher that gives her 3% off the price of petrol.
How much does Georgina have to pay for the petrol?

Compound Interest

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- Sebastian leaves £3000 in the bank for two years. It earns compound interest of 2% per year.
Calculate the total amount Sebastian has in the bank at the end of the two years.
- Fiona leaves £1600 in the bank for four years. It earns compound interest of 4% each year.
Calculate the total amount Fiona has in the bank at the end of the four years.
- A car was bought for £18000. Its value depreciated by 15% each year for the first three years.
What was its value at the end of the three years?

Simplifying Ratio Corbett Maths Video Support – 269

1. Simplify the ratio 25: 35
2. Simplify the ratio 18: 45
3. Simplify the ratio 300: 25

Ratio – Sharing the Total Corbett Maths Video Support – 270

1. Divide £700 in the ratio 5: 3: 2
2. Alex and Thomas share 30 sweets. They divide them in the ratio 3:2.
How many sweets does Thomas have?
3. Sophie has 60 pencils. The ratio of sharpened pencils to blunt pencils is 4:1
How many sharpened pencils does Sophie have?
4. The number of people who voted for the Green Party in an election was 1500. The number of people who voted for the Blue Party was 9000.
Write the ratio of Green Party voters to Blue Party voters in its simplest form.
5. A piece of carpet is 240cm long. Mr Jones cuts it into three pieces in the ratio 1: 2: 5
Work out the length of the longest piece of carpet.

Ratio – Given one Value Corbett Maths Video Support – 271

1. Sarah has some chocolates. 24 are white chocolate. 16 are milk chocolate. 8 are dark chocolate.
Write down the ratio of white chocolate to milk chocolate to dark chocolate. Give your ratio in its simplest form.
2. Chris and Molly win money in a competition. They share the money in the ratio 2: 3 Molly receives £240.
How much money does Chris receive?
How much money did they win in the competition?
3. Charlene and Danielle share some money in ratio 2: 3. Danielle gets £25 more than Charlie.
How much does each girl receive?
4. At a rugby match, the ratio of children to adults is 2: 3. There are 80 children in the crowd. Each adult ticket costs £8. Each child ticket costs a quarter of the adult ticket.
Work out the total money made from ticket sales.
5. Rachel has some apples and bananas. The ratio of apples to bananas is 2: 3. She has 14 apples.
Work out how many bananas Rachel has.
6. 4 schools sent students to a languages course. One of the schools sent both French and German students. The ratio of French to German students it sent was 1: 3. The school sent 21 German students. The other 3 schools sent the same number of students.
Work out the total number of students sent to the languages course.

Proportion Corbett Maths Video Support – 256

1. Omar is making Shortbread for 16 people. He has found a recipe for shortbread on a website. It serves 8 people.
 - Butter 150g
 - Caster Sugar 75g
 - Plain Flour 175g
 - Cornflour 50gHow much of each ingredient will he need for 16 people?

2. Here is a recipe for Scones. (Serves 8)

- Butter 60g
- Flour 260g
- Baking Powder 2 teaspoons
- Butter Milk 180ml

How much of each ingredient would be needed to make scones for 2 people?

3. Shown below is a recipe for Stuffed Turkey. (It serves 4)

- Turkey 500g
- Red onion 1
- Garlic Cloves 2
- Chestnut Mushrooms 150g
- Spinach 140g
- Chicken Stock 300ml

Mary wants to make Stuffed Turkey for 10 people.

How much of each ingredient is needed?

Include units.

4. Richard wants to make Shortbread for 3 people. He has this recipe. (Serves 4)

- Butter 80g
- Caster Sugar 60g
- Plain Flour 100g
- Cornflour 40g

How much of each ingredient will Richard need for 3 people?

5. Donna uses this recipe for Chilli Con Carne. (Serves 6)

- Mince 1kg
- Tomatoes 400g
- Chillies 3
- Kidney Beans 600g

Donna is going to use this recipe to make Chilli Con Carne for 15 people.

(a) Work out how many grams of mince she needs.

Shane uses the same recipe. He uses 1.2 kilograms of tomatoes.

(b) How many people is Shane making Chilli Con Carne for?

6. Thomas has a recipe for making Rice Krispie cakes. The recipe uses 120g of chocolate and 80g of Rice Krispies to make 12 cakes.

(a) How much chocolate should Thomas use to make 30 cakes?

(b) What is 120g out of 200g expressed as a percentage?

7. Jo has a recipe for Bolognese Sauce,

- Mince Beef 500g
- Chopped Tomatoes 750g
- Mushrooms 40g
- Chicken Stock 150ml

She only has 400g of minced beef.

How much of the other ingredients should she use?