

Foundation tier unit 11a check in test

Non-calculator

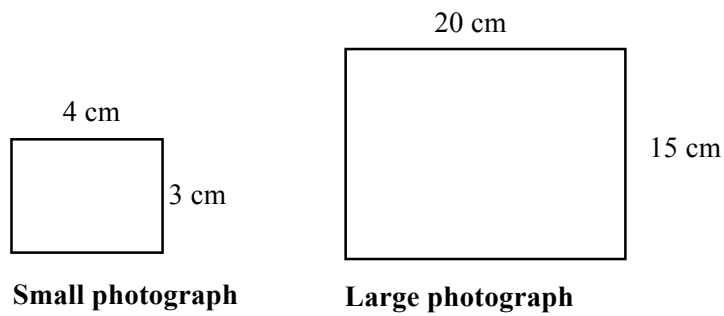
- Q1. A bracelet has 5 silver beads for every 4 gold beads.
There are 15 silver beads. How many gold beads are there?
- Q2. The ratio of the number of boys to the number of girls in a class is 3 : 4
What fraction of the class is boys?
- Q3. At a party, there are twice as many girls as boys.
Write this relationship as a linear function, where x represents the number of boys and y represents the number of girls.
- Q4. Ali and Kate share some sweets.
Ali gets three times as many sweets as Kate.
Write the amount of sweets the friends get as a ratio, Ali : Kate.
- Q5. An architect makes a scale model of building.
The real building will be 144 m tall.
The scale model is 60 cm tall.
Write a ratio to compare the height of the model to the height of the real building.
Write your ratio in its simplest form.
- Q6. Robert and his family are going on holiday to France.
A bank gives Robert this chart to help him to change between pounds (£) and euros (€).

pounds (£)		euros (€)
1	=	1.2
2	=	2.4
5	=	6.0
10	=	12.0
20	=	24.0
50	=	60.0
100	=	120.0

Robert changes £600 into euros (€).
How many euros should Robert get?

- Q7. Ali, Ben and Candice share £300 in the ratio 2 : 3 : 5
How much money does Candice get?

- Q8. Shez enlarges a small photograph to make a large photograph.
The diagram shows the dimensions of both photographs.



Write a ratio to compare the area of the small photograph with the area of the large photograph.

Write your ratio in its simplest form.

- Q9. In a breakfast cereal, 40% of the weight is fruit.
The rest of the cereal is oats.

Write down the ratio of the weight of fruit to the weight of oats.

Give your answer in the form $1 : n$.

- Q10. Carol mixes yellow and blue paint to make different shades of green paint.
Which paint has the most blue paint, compared to yellow?

	Yellow : Blue
Paint A	2 : 5
Paint B	4 : 9
Paint C	2 : 3
Paint D	6 : 11

Topics listed in objectives

- Understand and express the division of a quantity into a of number parts as a ratio;
- Write ratios in their simplest form;
- Write/interpret a ratio to describe a situation;
- Share a quantity in a given ratio including three-part ratios;
- Solve a ratio problem in context:
 - use a ratio to find one quantity when the other is known;
 - use a ratio to compare a scale model to a real-life object;
 - use a ratio to convert between measures and currencies;
 - problems involving mixing, e.g. paint colours, cement and drawn conclusions;
- Compare ratios;
- Write ratios in form $1 : m$ or $m : 1$;
- Write a ratio as a fraction;
- Write a ratio as a linear function;
- Write lengths, areas and volumes of two shapes as ratios in simplest form;
- Express a multiplicative relationship between two quantities as a ratio or a fraction.

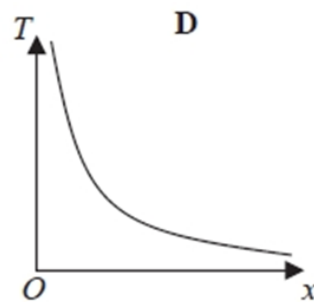
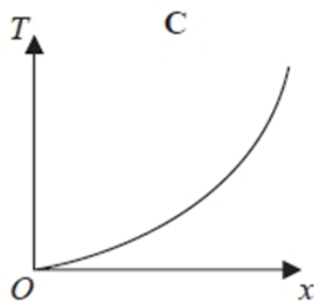
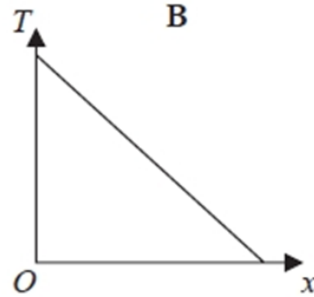
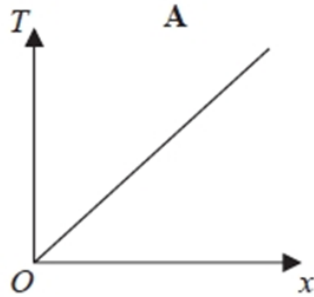
Answers

- Q1. 12
Q2. $\frac{3}{7}$
Q3. $y = 2x$
Q4. 3 : 1
Q5. 1 : 240
Q6. €720
Q7. £150
Q8. 1 : 25
Q9. 1 : 1.5
Q10. Paint B

Foundation tier unit 11b check in test

Calculator

Q1. Here are four graphs.



Which graph shows that T is directly proportional to x ?

Q2. A is inversely proportional to B .

Choose the statement that best describes what happens to the value of B as the value of A changes.

- A As A increases, B increases.
- B As A increases, B decreases.
- C As A increases, B increases then decreases.
- D As A increases, B stays the same.

Q3. The cost of 3 calculators is £26.85

Work out the cost of 5 of these calculators.

Q4. Linda is going on holiday to the Czech Republic.

She needs to change some money into koruna.

She can only change her money into 100 koruna notes.

Linda only wants to change up to £200 into koruna.

She wants as many 100 koruna notes as possible.

The exchange rate is £1 = 25.82 koruna.

How many 100 koruna notes should she get?

Q5. The recipe shows the ingredients to make apple pie for 8 people.

Apple pie (serves 8)
200 g flour
4 large apples
120 g butter
60 g caster sugar

How many grams of butter are needed to make an apple pie for 20 people?

Q6. Here are the instructions for making a drink.

Add 100 ml of juice to 2 litres of water

Dev uses 5 litres of water to make the drink.
How much drink has he made?

Q7. Liam, Sarah and Emily shared some money in the ratio 2 : 3 : 7
Emily got £112.

How much money did Sarah get?

Q8. It takes 5 people 30 minutes to paint a room.
How long will it take 15 people to paint the same room?

Q9. A supermarket sells a shampoo in two different sized bottles.

The small bottle contains 300ml and costs £1.80

The large bottle contains 500ml and costs £3.15

Which bottle is the best value for money?

You must show your working.

Q10. The table shows values for P and Q .

P	0	1	2	3	5
Q	0	3	6	9	15

Choose the statement that best describes the relationship between P and Q .

- A P and Q are in direct proportion because both values get larger as you read across the table.
- B P and Q are in direct proportion because $Q = 3P$ for all values.
- C P and Q are not in direct proportion because 0 is not 3 times bigger than 0.
- D P and Q are not in direct proportion because the difference between the P values is not always the same.

Topics listed in objectives

- Understand and use proportion as equality of ratios;
- Solve word problems involving direct and inverse proportion;
- Work out which product is the better buy;
- Scale up recipes;
- Convert between currencies;
- Find amounts for 3 people when amount for 1 given;
- Solve proportion problems using the unitary method;
- Recognise when values are in direct proportion by reference to the graph form;
- Understand inverse proportion: as x increases, y decreases (inverse graphs done in later unit);
- Understand direct proportion ---> relationship $y = kx$.

Answers

- Q1. A
Q2. B
Q3. £44.75
Q4. 51
Q5. 300g
Q6. 5.25 litres
Q7. £48
Q8. 10 minutes
Q9. The small bottle is cheaper by 3p per 100ml
Q10. B