

## Week 3

### This week in a nutshell:

This week, it is worth noting the various methods for dealing with a product of binomials. Time constraints may need adjusting depending on the confidence levels with this topic; accuracy is more important than speed at this stage. Question 4 revisits Pythagoras' Theorem, with the prospect of beginning trigonometry, this term, close at hand.

**Question 1:** Statistical measures

**Question 2:** Arithmetic with fractions

**Question 3:** Products of binomials

**Question 4:** Pythagoras' Theorem

**Question 5:** Bar charts

The questions aim to develop and deepen understanding over the week. Due to the necessity of the topics covered this week, there is an emphasis on the interchangeability of command words, and language flexibility. It may be worth taking some extra time this week to make sure your students are developing their mathematical literacy.

### This week's ideas for class discussion include:

Question 1: **Statistical measures**

- What statistical measures do you know?
- How are statistical measures used?

Question 2: **Arithmetic with fractions**

- \*reflect on previous learning\*

Question 3: **Products of binomials**

- How could you check your result when finding a product of binomials?

Question 4: **Pythagoras' Theorem**

- Do you know a mnemonic for remembering Pythagoras' Theorem?

Question 5: **Bar charts**

- What features does a bar chart need?

## Week 3: Day 1

- 1) Find the median:

3.7, 3.2, 3.1, 4.1, 3.8

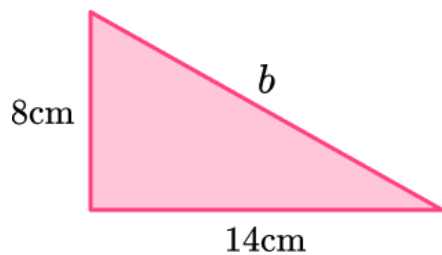
- 2) Calculate:

$$\frac{3}{8} \times \frac{6}{7} =$$

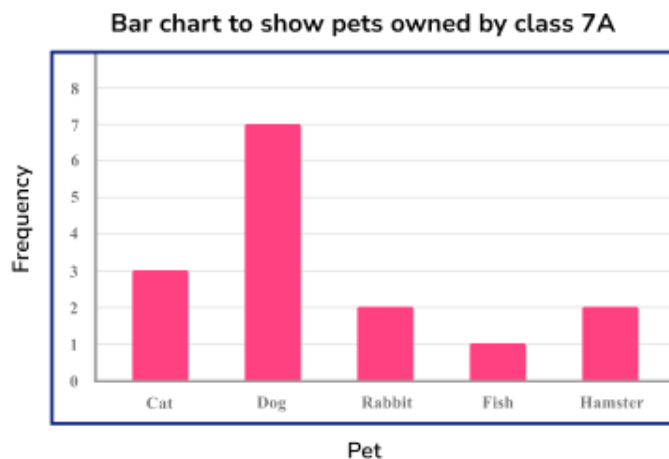
- 3) Expand and simplify:

$$(x + 2)(x + 3) =$$

- 4) Use Pythagoras' Theorem to work out the length of side  $b$ , giving your answer to one decimal place.



- 5) What was the least popular pet owned by class 7A?



## Week 3: Day 1 Answers

- 1) Find the median: 3.7

3.7, 3.2, 3.1, 4.1, 3.8

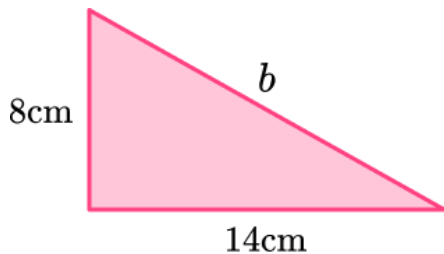
- 2) Calculate:

$$\frac{3}{8} \times \frac{6}{7} = \frac{9}{28}$$

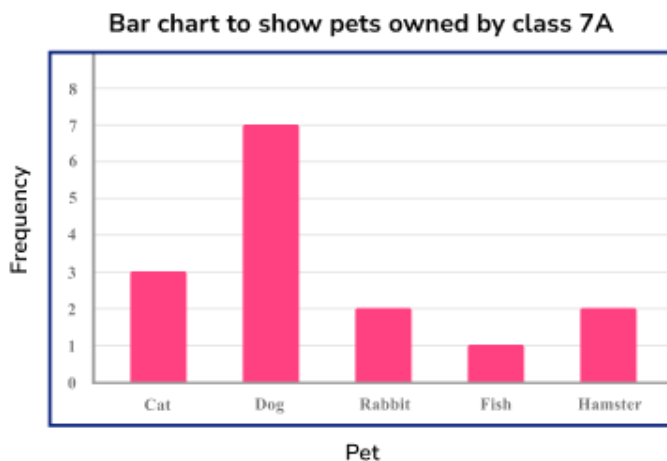
- 3) Expand and simplify:

$$(x + 2)(x + 3) = x^2 + 5x + 6$$

- 4) Use Pythagoras' Theorem to work out the length of side  $b$ , giving your answer to one decimal place. 16.1cm



- 5) What was the least popular pet owned by class 7A? Fish



## Week 3: Day 2

- 1) Find the mode:

57, 83, 62, 83, 67, 82

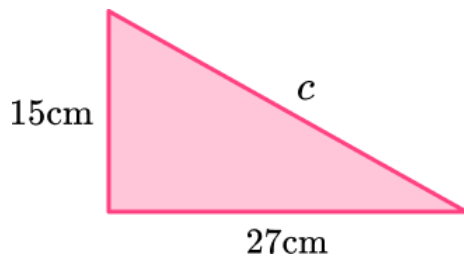
- 2) Calculate:

$$\frac{5}{9} - \frac{2}{5} =$$

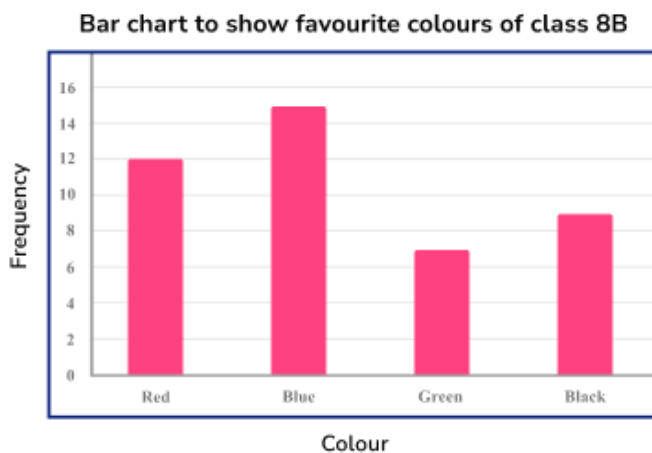
- 3) Expand and simplify:

$$(x + 2)(x - 5) =$$

- 4) Use Pythagoras' Theorem to work out the length of side  $c$ , giving your answer to one decimal place.



- 5) How many more liked red than black?



## Week 3: Day 2 Answers

- 1) Find the mode: 83

57, 83, 62, 83, 67, 82

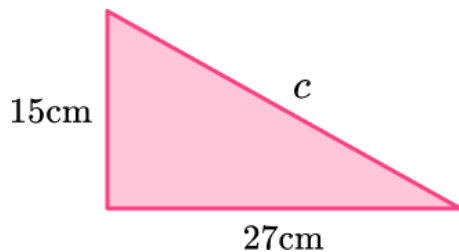
- 2) Calculate:

$$\frac{5}{9} - \frac{2}{5} = \frac{7}{45}$$

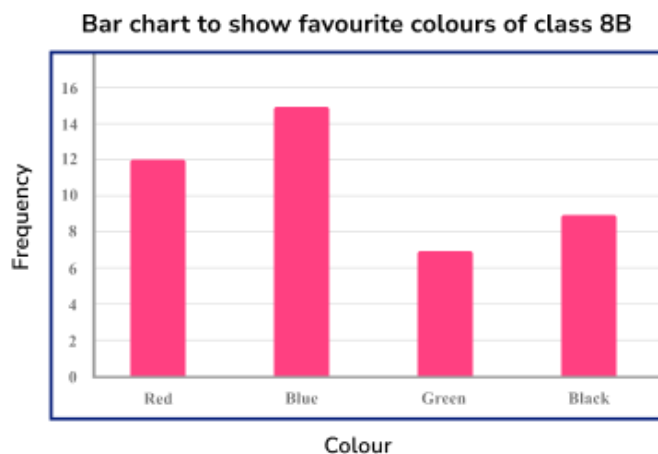
- 3) Expand and simplify:

$$(x + 2)(x - 5) = x^2 - 3x - 10$$

- 4) Use Pythagoras' Theorem to work out the length of side  $c$ , giving your answer to one decimal place. 30.9cm



- 5) How many more liked red than black? 3



## Week 3: Day 3

- 1) Find the range:

14.3, 9.9, 11.8, 12.4, 10

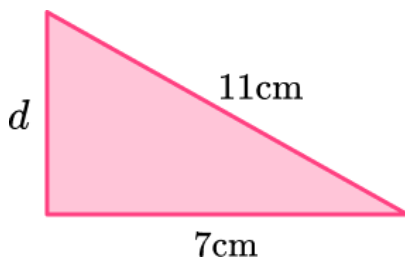
- 2) Calculate:

$$2\frac{1}{3} \times \frac{4}{5} =$$

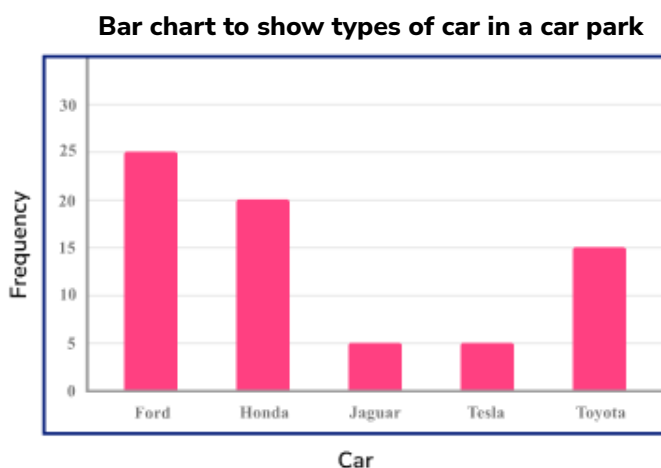
- 3) Expand and simplify:

$$(x - 4)(x + 7) =$$

- 4) Use Pythagoras' Theorem to work out the length of side  $d$ , giving your answer to one decimal place.



- 5) How many cars were in the car park?



## Week 3: Day 3 Answers

- 1) Find the range: 4.4

14.3, 9.9, 11.8, 12.4, 10

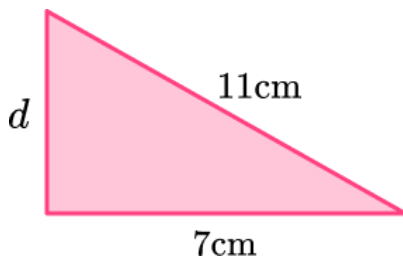
- 2) Calculate:

$$2\frac{1}{3} \times \frac{4}{5} = \frac{28}{15} \text{ or } 1\frac{13}{15}$$

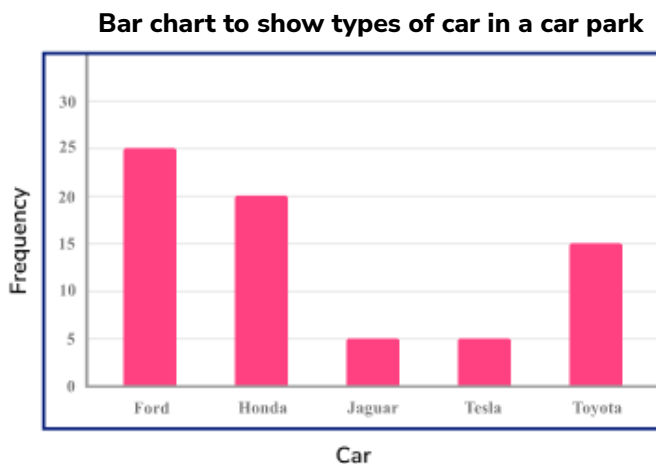
- 3) Expand and simplify:

$$(x - 4)(x + 7) = x^2 + 3x - 28$$

- 4) Use Pythagoras' Theorem to work out the length of side  $d$ , giving your answer to one decimal place. 8.5cm



- 5) How many cars were in the car park? 70



## Week 3: Day 4

- 1) Find the mean:

13, 9, 18, 17, 13

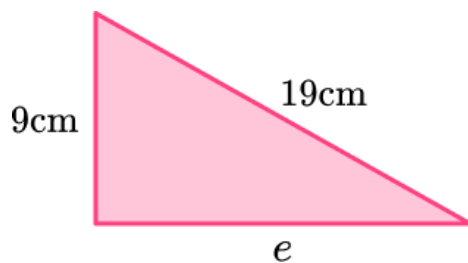
- 2) Calculate:

$$\frac{2}{5} + \frac{1}{3} + \frac{1}{4} =$$

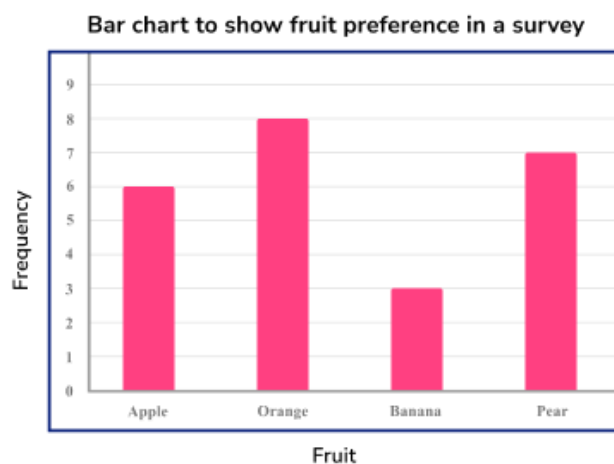
- 3) Expand and simplify:

$$(x - 5)(x - 3) =$$

- 4) Use Pythagoras' Theorem to work out the length of side  $e$ , giving your answer to one decimal place.



- 5) How many people preferred banana or pear?



## Week 3: Day 4 Answers

- 1) Find the mean: 14

13, 9, 18, 17, 13

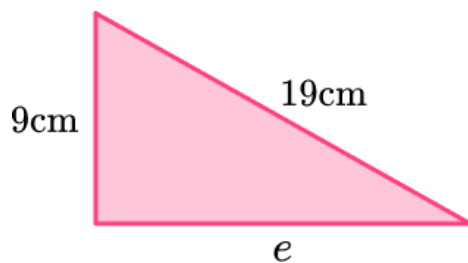
- 2) Calculate:

$$\frac{2}{5} + \frac{1}{3} + \frac{1}{4} = \frac{59}{60}$$

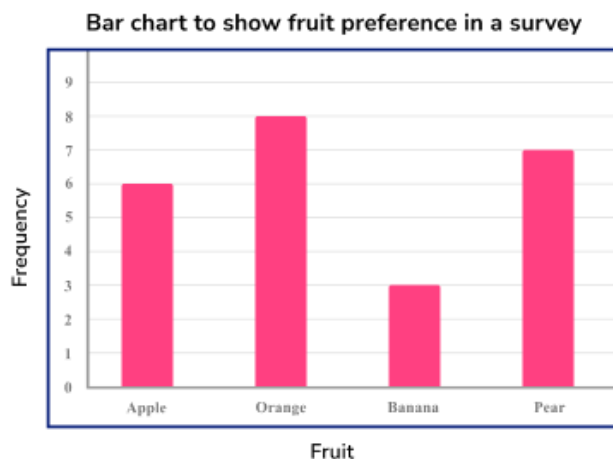
- 3) Expand and simplify:

$$(x - 5)(x - 3) = x^2 - 8x + 15$$

- 4) Use Pythagoras' Theorem to work out the length of side  $e$ , giving your answer to one decimal place. 16.7cm



- 5) How many people preferred banana or pear? 10



## Week 3: Day 5

- 1) Find the median:

8.8, 7.2, 8.1, 7.9, 8.3, 7.4

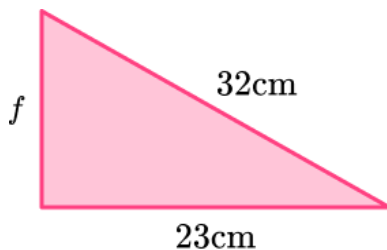
- 2) Calculate:

$$\frac{8}{12} \div \frac{6}{9} =$$

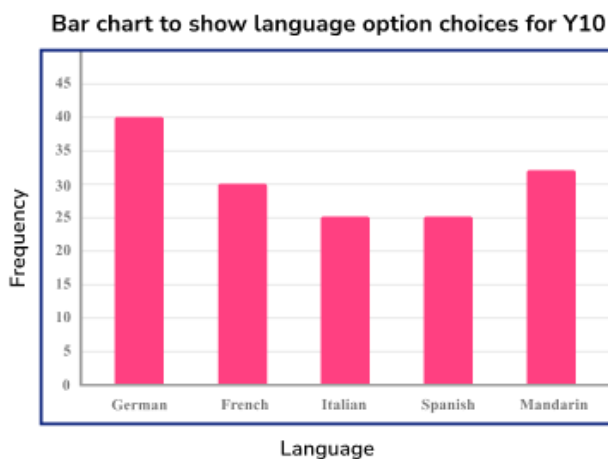
- 3) Expand and simplify:

$$(x + 1)^2 =$$

- 4) Use Pythagoras' Theorem to work out the length of side  $f$ , giving your answer to one decimal place.



- 5) Which languages were chosen by the same number of students?



## Week 3: Day 5 Answers

- 1) Find the median: 8

8.8, 7.2, 8.1, 7.9, 8.3, 7.4

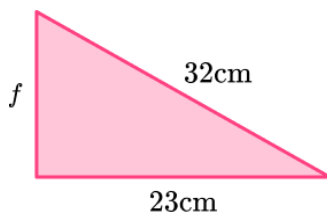
- 2) Calculate:

$$\frac{8}{12} \div \frac{6}{9} = 1$$

- 3) Expand and simplify:

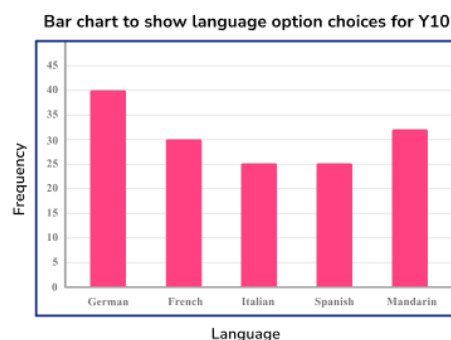
$$(x + 1)^2 = x^2 + 2x + 1$$

- 4) Use Pythagoras' Theorem to work out the length of side  $f$ , giving your answer to one decimal place. 22.2cm



- 5) Which languages were chosen by the same number of students?

Italian and Spanish



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