

Week 11

This week in a nutshell:

Students may need a written example to model their answers from for Q1. A notable difference in the pronunciation of 'arithmetic sequences' and 'arithmetic with decimals' could be highlighted here for Q2 and Q3. Consider printing out the shapes in Q4 for students to draw on the lines of symmetry. Q5 relates back to finding a percentage of an amount which was covered in week 4.

Question 1: Understanding the mean

Question 2: Completing sequences

Question 3: Arithmetic with decimals

Question 4: Symmetry

Question 5: Using percentages to compare

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: Understanding the mean

- Here is a dataset with one missing value: 9, 6, 7, x , 4, 10. The teacher says "Can you find x if the mean of this dataset is 5?" Simon says "It is impossible for the mean to be 5 because the sum of the values is already greater than 30 without x ". Do you agree with Simon? Explain your reasoning.

Question 2: Completing sequences

- Challenge:** Can you find the missing numbers in these arithmetic sequences? (a) 2, $_$, $_$, 11... (b) 5, $_$, $_$, $_$, 13... (c) 1, $_$, $_$, $_$, $_$, 21... Discuss the strategies you are using with a partner.

Question 3: Arithmetic with decimals

- What are the answers to $600 \div 200$, $600 \div 20$, $600 \div 2$, $600 \div 0.2$, $600 \div 0.02$, $600 \div 0.002$?
- Discuss the impact of place value when dividing by a decimal.

Question 4: Symmetry

- Simon says "Every shape has at least 1 line of symmetry and at least order 1 for rotational symmetry". Do you agree? Discuss the reasons for your answer.

Question 5: Using percentages to compare

- Which gives the greater value, '30% of 48' or '15% of 98'? Can you find the answer without actually calculating any percentages?

Week 11: Day 1

- 1) If the mean of this data set is 5, what number is x ?

3, 4, x , 7

- 2) Find the missing numbers in this arithmetic sequence:

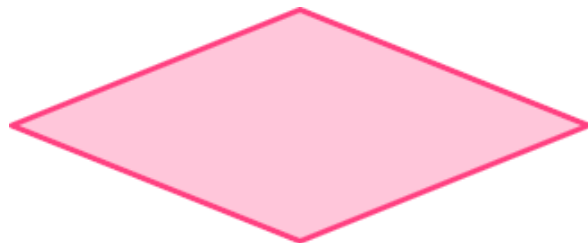
4, 11, 18, ____, ____, ...

- 3) Evaluate:

$$1.3 + 4.82 =$$

- 4) For this rhombus:

- a) State the order of rotational symmetry
- b) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater?

A

20% of 50

B

25% of 48

Week 11: Day 2 Answers

- 1) If the mean of this data set is 5, what number is x ?

$$3, 4, x, 7 \quad x = 6$$

- 2) Find the missing numbers in this arithmetic sequence:

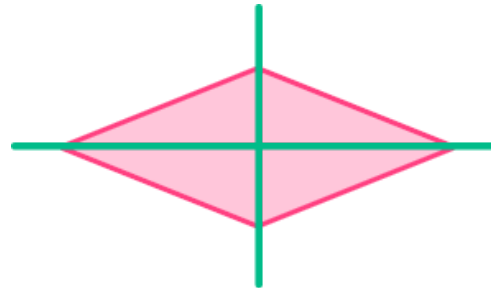
$$4, 11, 18, 25, 32, \dots$$

- 3) Evaluate:

$$1.3 + 4.82 = 6.12$$

- 4) For this rhombus:

- c) State the order of rotational symmetry
- d) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater? B

A
20% of 50
10

B
25% of 48
12

Week 11: Day 2

- 1) If the mean of this data set is 6, what number is x ?

3, 4, 8, x

- 2) Find the missing numbers in this arithmetic sequence:

29, 16, 3, ____, ____, ...

- 3) Evaluate:

$$0.18 - 0.019 =$$

- 4) For this image:

- a) State the order of rotational symmetry
- b) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater?

A

40% of 80

B

60% of 70

Week 11: Day 2 Answers

- 1) If the mean of this data set is 6, what number is x ?

3, 4, 8, x $x = 9$

- 2) Find the missing numbers in this arithmetic sequence:

29, 16, 3, -10, -23, ...

- 3) Evaluate:

$$0.18 - 0.019 = 0.161$$

- 4) For this image:

- c) State the order of rotational symmetry 2
d) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater? B

A
40% of 80
 32

B
60% of 70
 42

Week 11: Day 3

- 1) If the mean of this data set is 7, what number is x ?

3, 4, x , 12, 12

- 2) Find the missing numbers in this arithmetic sequence:

11, __, 19, __, 27...

- 3) Evaluate:

$$4.2 \times 1.8 =$$

- 4) For this parallelogram:

- a) State the order of rotational symmetry
- b) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater?

A

75% of 144

B

50% of 210

Week 11: Day 3 Answers

- 1) If the mean of this data set is 7, what number is x ?

$$3, 4, x, 12, 12 \quad x = 4$$

- 2) Find the missing numbers in this arithmetic sequence:

$$11, 15, 19, 23, 27, \dots$$

- 3) Evaluate:

$$4.2 \times 1.8 = 7.56$$

- 4) For this parallelogram:

- c) State the order of rotational symmetry
- d) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater? A

A
75% of 144
108

B
50% of 210
105

Week 11: Day 4

- 1) If the mean of this data set is 9, what number is x ?

4, x , 7, 6, 17, 9

- 2) Find the missing numbers in this arithmetic sequence:

3, ____, 10, ____, 17, ...

- 3) Evaluate:

$$2.03 + 4.7 + 0.334 =$$

- 4) For this image:

- a) State the order of rotational symmetry
- b) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater?

A

5% of 64

B

20% of 17

Week 11: Day 4 Answers

- 1) If the mean of this data set is 9, what number is x ?

4, x , 7, 6, 17, 9 $x = 11$

- 2) Find the missing numbers in this arithmetic sequence:

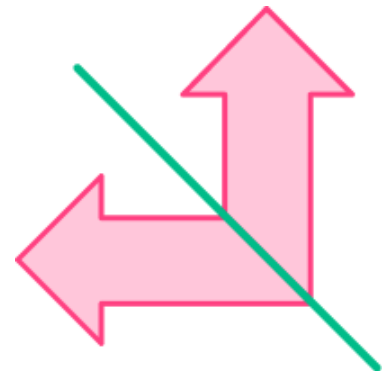
3, 6.5, 10, 13.5, 17, ...

- 3) Evaluate:

$$2.03 + 4.7 + 0.334 = 7.064$$

- 4) For this image:

- c) State the order of rotational symmetry
- d) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater? **B**

A

5% of 64

3.2

B

20% of 17

3.4

Week 11: Day 5

- 1) If the mean of this data set is 6, what number is x ?

8, 3, 9, 2, 4, x , 7

- 2) Find the missing numbers in this arithmetic sequence:

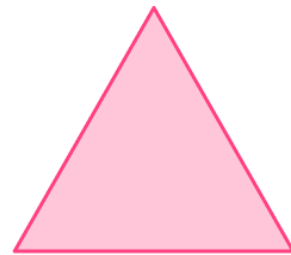
____, 5, -1, ____, -13, ...

- 3) Evaluate:

$$6.52 \div 0.04 =$$

- 4) For this equilateral triangle:

- a) State the order of rotational symmetry
- b) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater?

A

10% of 98

B

15% of 65

Week 11: Day 5 Answers

- 1) If the mean of this data set is 6, what number is x ?

$$8, 3, 9, 2, 4, x, 7 \quad x = 9$$

- 2) Find the missing numbers in this arithmetic sequence:

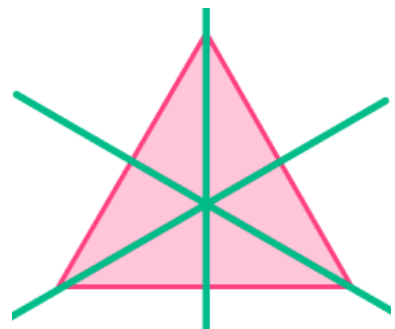
$$\underline{11}, 5, -1, \underline{-7}, -13, \dots$$

- 3) Evaluate:

$$6.52 \div 0.04 = 163$$

- 4) For this equilateral triangle:

- c) State the order of rotational symmetry
- d) Draw any lines of reflectional symmetry



- 5) Which amount, A or B, is greater? **A**

A
10% of 98
9.8

B
15% of 65
9.75

Do you have KS4 students who need additional support in maths?

Our specialist tutors will help them develop the skills they need to succeed at GCSE in weekly one to one online revision lessons. Trusted by secondary schools across the UK. Visit thirdspacelearning.com to find out more.