

## Week 11

### This week in a nutshell:

Encourage students to show each step of their working out in Q1. For Q2, discuss the use of equivalent fractions in calculations (adding and subtracting fractions / simplifying fractions). Q3 takes us back to Week 5 where this topic was first reviewed. Ask students to reflect on their previous learning here. Consider printing out the shapes for Q4 so that students can draw on the lines of symmetry. Alternatively ask students to sketch a copy of the shapes. Note that Q5 is designed to simply embed the concept at this stage rather than provide any problem solving practice.

**Question 1:** BIDMAS

**Question 2:** Equivalent fractions

**Question 3:** Measures of average and the range

**Question 4:** Lines of symmetry

**Question 5:** Interior angles

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: BIDMAS**

- **Challenge:** Calculate the answer to  $5 + 2 \times 8 + 4 - 12 \div 3 + 1$ . By putting brackets in different places in this calculation, how many different answers can you generate?

**Question 2: Equivalent fractions**

- **What misconceptions might primary school students have about equivalent fractions? How could you demonstrate to a primary school student that three quarters is the same as six eighths?**

**Question 3: Measures of average and the range**

- **Recall the mnemonics you wrote in Week 5 to help you remember which average is which?**
- **Challenge:** Write a data set that has a mode of 4, a median of 5 and a mean of 6.

**Question 4: Lines of symmetry**

- **Simon says "The number of lines of symmetry is always the same as the order of rotational symmetry". Is Simon correct? Draw examples to justify your answer.**

**Question 5: Interior angles**

- **The sum of the angles in a triangle is  $180^\circ$ . A quadrilateral is  $360^\circ$ . A pentagon is  $540^\circ$ . A hexagon is  $720^\circ$ . What do you notice? Is there a relationship between the number of sides and the angle sum?**

## Week 11: Day 1

- 1) Calculate:

$$15 - 4^2 \div 2 =$$

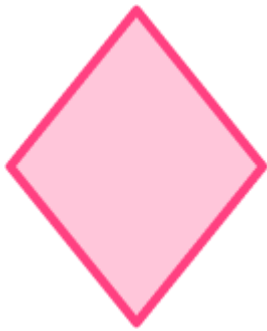
- 2) Complete the equivalent fractions:

$$\frac{1}{4} = \frac{\boxed{\phantom{000}}}{16} = \frac{5}{\boxed{\phantom{000}}}$$

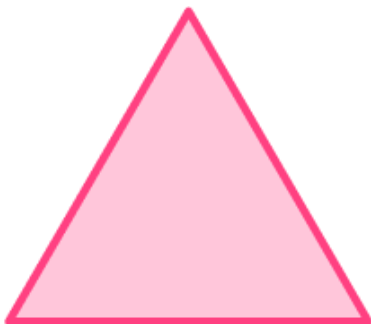
- 3) Find the mode for this data set:

32, 37, 41, 37, 54, 68

- 4) Draw all lines of symmetry:



- 5) What is the size of one interior angle in an equilateral triangle?



## Week 11: Day 1 Answers

1) Calculate:

$$\begin{aligned} 15 - 4^2 \div 2 &= 15 - 16 \div 2 \\ &= 15 - 8 \\ &= 7 \end{aligned}$$

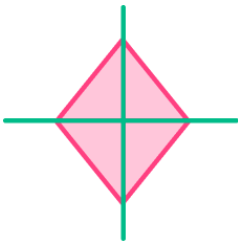
2) Complete the equivalent fractions:

$$\frac{1}{4} = \frac{4}{16} = \frac{5}{20}$$

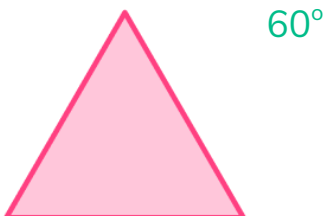
3) Find the mode for this data set:

32, 37, 41, 37, 54, 68      37

4) Draw all lines of symmetry:



5) What is the size of one interior angle in an equilateral triangle?



## Week 11: Day 2

1) Calculate:

$$6 \times 5 - 8 \div 2 =$$

2) Complete the equivalent fractions:

$$\frac{1}{\boxed{\phantom{00}}} = \frac{5}{25} = \frac{16}{\boxed{\phantom{00}}}$$

3) Find the range for this data set:

57, 98, 65, 81, 79, 59

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a square?



## Week 11: Day 2 Answers

1) Calculate:

$$6 \times 5 - 8 \div 2 = 30 - 4 \\ = 26$$

2) Complete the equivalent fractions:

$$\frac{1}{\boxed{5}} = \frac{5}{25} = \frac{16}{\boxed{80}}$$

3) Find the range for this data set:

57, 98, 65, 81, 79, 59      41

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a square?



## Week 11: Day 3

1) Calculate:

$$6 + 2^4 \div 4 =$$

2) Complete the equivalent fractions:

$$\frac{\boxed{\phantom{00}}}{3} = \frac{6}{\boxed{\phantom{00}}} = \frac{14}{21}$$

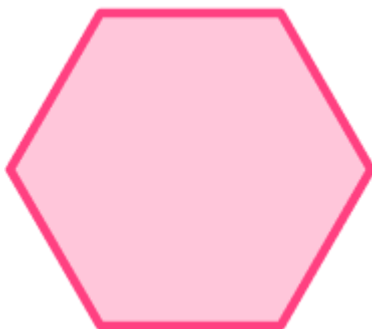
3) Find the mean for this data set:

9, 7.5, 5, 6.5

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a regular hexagon?



## Week 11: Day 3 Answers

1) Calculate:

$$\begin{aligned}6 + 2^4 \div 4 &= 6 + 16 \div 4 \\&= 6 + 4 \\&= 10\end{aligned}$$

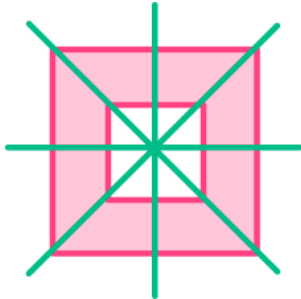
2) Complete the equivalent fractions:

$$\frac{\boxed{2}}{3} = \frac{6}{\boxed{9}} = \frac{14}{21}$$

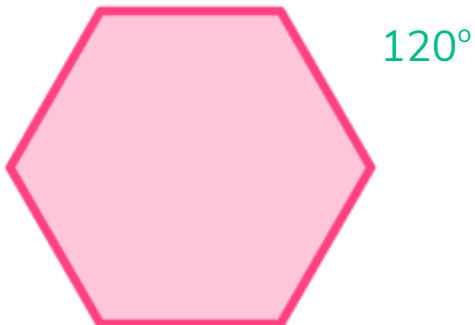
3) Find the mean for this data set:

$$9, 7.5, 5, 6.5 \quad 7$$

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a regular hexagon?



## Week 11: Day 4

1) Calculate:

$$(7 - 3) \times (3^2 - 2) =$$

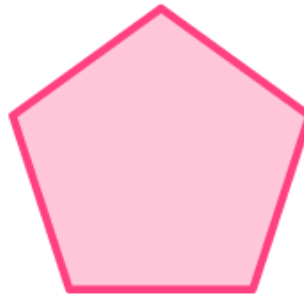
2) Complete the equivalent fractions:

$$\frac{3}{\boxed{\phantom{00}}} = \frac{12}{16} = \frac{\boxed{\phantom{00}}}{32}$$

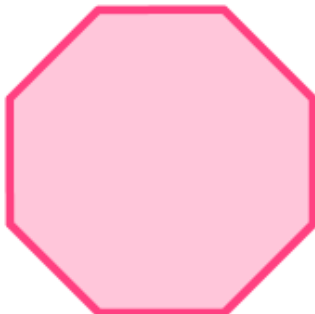
3) Find the median for this data set:

7, 9, 11, 13, 13, 8, 9, 5

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a regular octagon?





## Week 11: Day 4 Answers

1) Calculate:

$$\begin{aligned}(7 - 3) \times (3^2 - 2) &= 4 \times (9 - 2) \\ &= 4 \times 7 \\ &= 28\end{aligned}$$

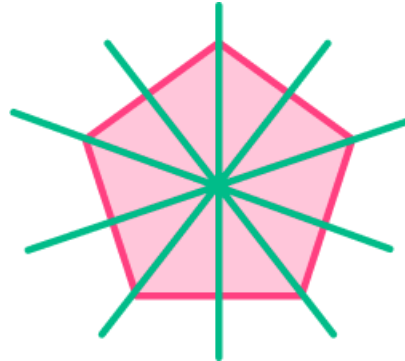
2) Complete the equivalent fractions:

$$\frac{3}{4} = \frac{12}{16} = \frac{24}{32}$$

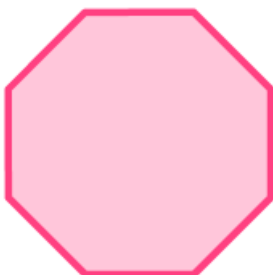
3) Find the median for this data set:

7, 9, 11, 13, 13, 8, 9, 5      9

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a regular octagon?



135°

## Week 11: Day 5

1) Calculate:

$$25 \div (8 - 3)^2 =$$

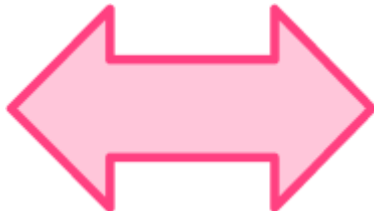
2) Complete the equivalent fractions:

$$\frac{\boxed{\phantom{000}}}{8} = \frac{15}{\boxed{\phantom{000}}} = \frac{45}{72}$$

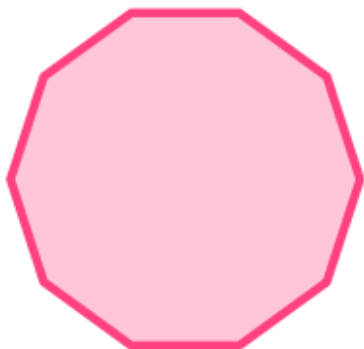
3) Find the mean for this data set:

2, 3, 1.5, 2.4, 3, 3.1

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a regular decagon?



## Week 11: Day 5 Answers

1) Calculate:  $25 \div (8 - 3)^2 = 25 \div 5^2$   
 $= 25 \div 25$   
 $= 1$

2) Complete the equivalent fractions:

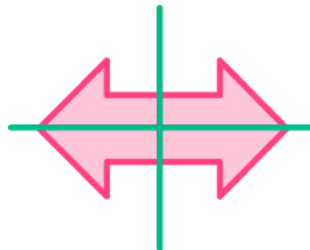
$$\frac{\boxed{5}}{8} = \frac{15}{\boxed{24}} = \frac{45}{72}$$

3) Find the mean for this data set:

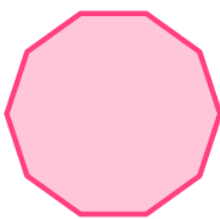
2, 3, 1.5, 2.4, 3, 3.1

2.5

4) Draw all lines of symmetry:



5) What is the size of one interior angle in a regular decagon?



144°

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