

## Week 6

### This week in a nutshell:

Here we see position to term rules, which require some algebraic understanding, so feel free to discuss/recap the ideas here before starting. Question 5 students will have to combine a newly acquired skill with concepts learnt last year, so some students may need a little extra time/support on days 1 and 2.

**Question 1:** Position to term rules

**Question 2:** Writing decimals as fractions

**Question 3:** Missing numbers in sequences

**Question 4:** Understanding ratio

**Question 5:** Estimating area and perimeter

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: **Position to term rules**

- How is a position-to-term rule used compared to a term-to-term rule?
- Why might we want a position-to-term rule instead of a term-to-term rule?

Question 2: **Writing decimals as fractions**

- Why might we want to be able to write a decimal as a fraction?

Question 3: **Missing numbers in sequences**

- What features of a sequence can be used to find missing terms?

Question 4: **Understanding ratio**

- What do we need to take into consideration about writing a ratio in its simplest terms?

Question 5: **Estimating area and perimeter**

- In what aspects of life might this method be useful?
- What do we have to take into consideration when using an estimate for length or area?

## Week 6: Day 1

- 1) Generate the first 5 terms of the sequence with position to term rule

$$2n - 1$$

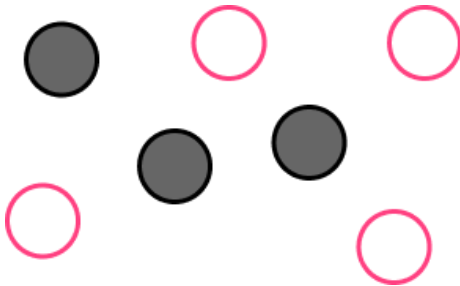
- 2) Write the decimal as a fraction in its simplest form:

$$0.25$$

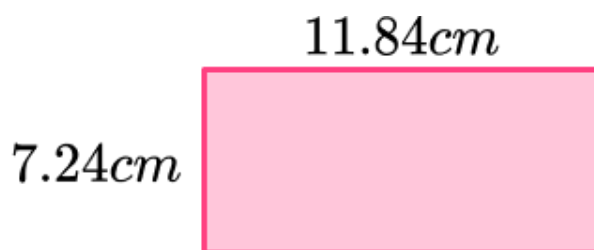
- 3 Fill in the missing numbers:

$$2, 5, 8, 11, \_, \_, \dots$$

- 4) Write the ratio of black to white.



- 5) By first rounding to one significant figure, estimate the area of this rectangle.



## Week 6: Day 1 Answers

- 1) Generate the first 5 terms of the sequence with position to term rule

$$2n - 1$$
$$1, 3, 5, 7, 9$$

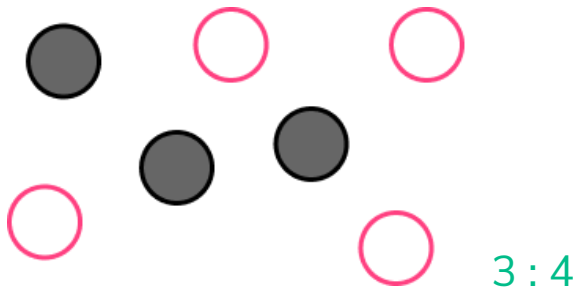
- 2) Write the decimal as a fraction in its simplest form:

$$0.25 = \frac{1}{4}$$

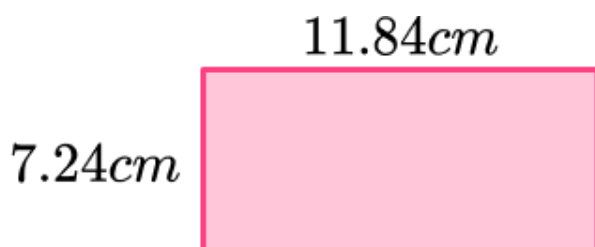
- 3 Fill in the missing numbers:

2, 5, 8, 11, 14, 17, ...

- 4) Write the ratio of black to white.



- 5) By first rounding to one significant figure, estimate the area of this rectangle.



$$(7 \times 10) \quad 70 \text{ cm}^2$$

## Week 6: Day 2

- 1) Generate the first 5 terms of the sequence with position to term rule

$$\frac{1}{2}n$$

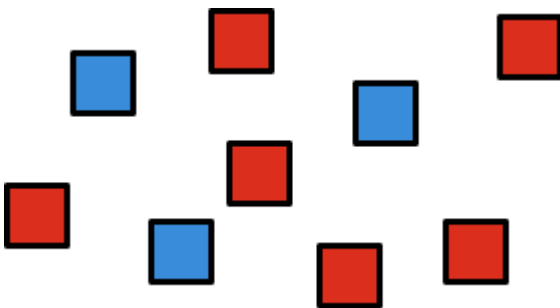
- 2) Write the decimal as a fraction in its simplest form:

0.8

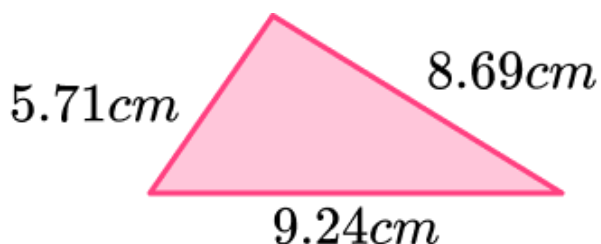
- 3 Fill in the missing numbers:

3, 10, \_\_, 24, \_\_, 38, ...

- 4) Write the ratio of red to blue in its simplest form.



- 5) By first rounding to one significant figure, estimate the perimeter of this triangle.



## Week 6: Day 2 Answers

- 1) Generate the first 5 terms of the sequence with position to term rule

$$\frac{1}{2}n \quad \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}$$

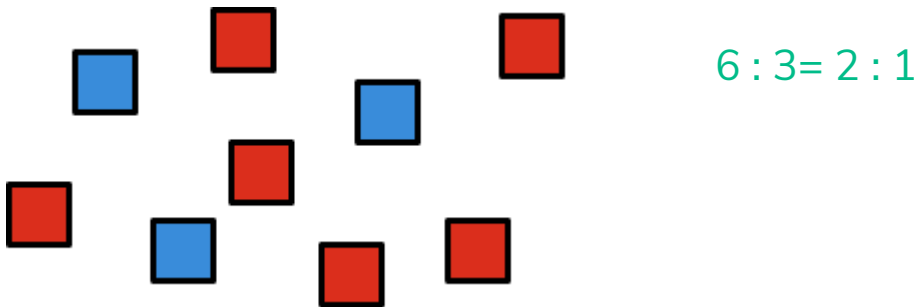
- 2) Write the decimal as a fraction in its simplest form:

$$0.8 = \frac{4}{5}$$

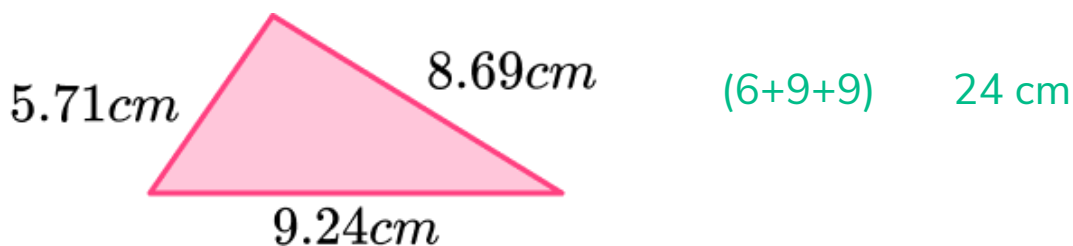
- 3 Fill in the missing numbers:

3, 10, 17, 24, 31, 38, ...

- 4) Write the ratio of red to blue in its simplest form.



- 5) By first rounding to one significant figure, estimate the perimeter of this triangle.



## Week 6: Day 3

- 1) Generate the first 5 terms of the sequence with position to term rule

$$4n + 1$$

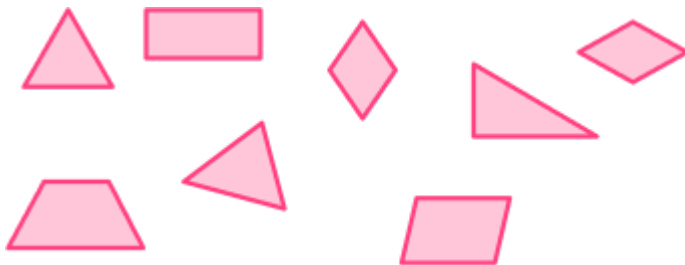
- 2) Write the decimal as a fraction in its simplest form:

0.64

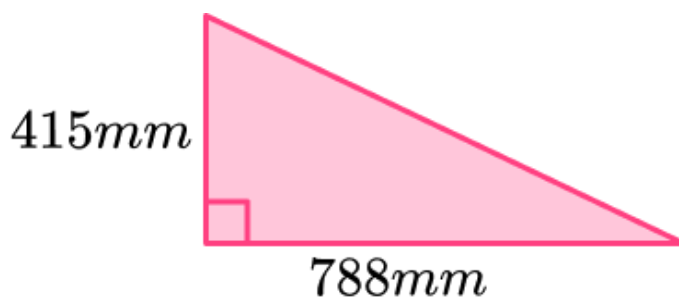
- 3) Fill in the missing numbers:

12, 7, 2, -3, \_\_, \_\_, ...

- 4) Write the ratio of triangles to quadrilaterals.



- 5) By first rounding to one significant figure, estimate the area of this triangle.



## Week 6: Day 3 Answers

- 1) Generate the first 5 terms of the sequence with position to term rule

$$4n + 1 \quad 5, 9, 13, 17, 21$$

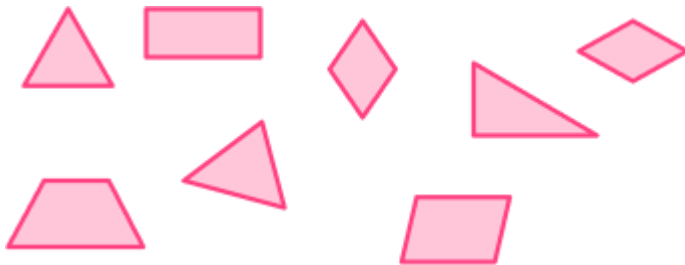
- 2) Write the decimal as a fraction in its simplest form:

$$0.64 = \frac{16}{25}$$

- 3) Fill in the missing numbers:

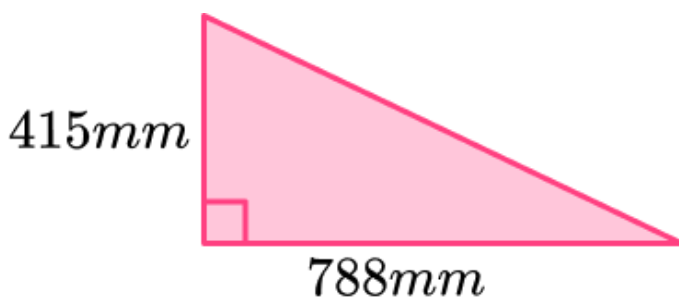
$$12, 7, 2, -3, \underline{-8}, \underline{-13}, \dots$$

- 4) Write the ratio of triangles to quadrilaterals.



$$3 : 5$$

- 5) By first rounding to one significant figure, estimate the area of this triangle.



$$\left(\frac{1}{2} \times 400 \times 800\right) \\ 160000 \text{ mm}^2$$

## Week 6: Day 4

- 1) Generate the first 5 terms of the sequence with position to term rule

$$2 - 3n$$

- 2) Write the decimal as a fraction in its simplest form:

0.095

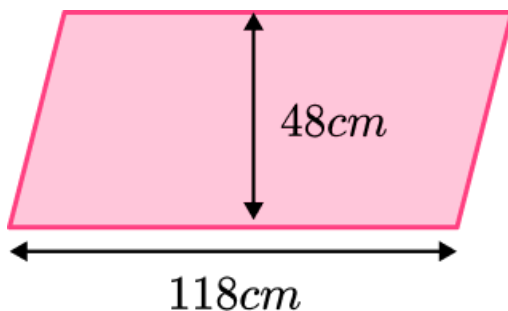
- 3) Fill in the missing numbers:

7, 3, \_\_, -5, \_\_, -13, ...

- 4) Use shading to indicate the ratio 3:1 for shaded to unshaded.



- 5) By first rounding to one significant figure, estimate the area of this parallelogram.





## Week 6: Day 4 Answers

- 1) Generate the first 5 terms of the sequence with position to term rule

$$2 - 3n \quad -1, -4, -7, -10, -13$$

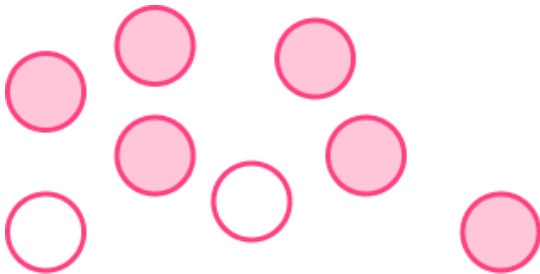
- 2) Write the decimal as a fraction in its simplest form:

$$0.095 = \frac{19}{200}$$

- 3) Fill in the missing numbers:

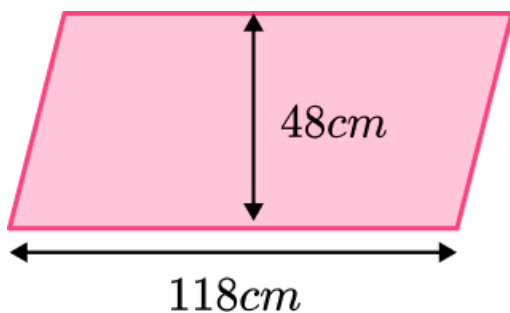
$$7, 3, -1, -5, -9, -13, \dots$$

- 4) Use shading to indicate the ratio 3:1 for shaded to unshaded.



Any 6 shaded, e.g.

- 5) By first rounding to one significant figure, estimate the area of this parallelogram.



$$(50 \times 100) \\ 5000 \text{ cm}^2$$

**Week 6: Day 5**

- 1) Generate the first 5 terms of the sequence with position to term rule

$$5n - 6$$

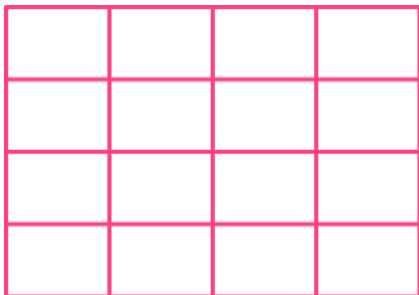
- 2) Write the decimal as a fraction in its simplest form:

$$0.625$$

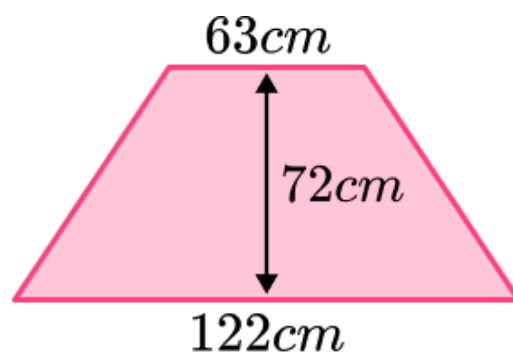
- 3) Fill in the missing numbers:

$$-1, 7, \_, \_, 31, \dots$$

- 4) Use shading to indicate the ratio 5:3 for shaded to unshaded.



- 5) By first rounding to one significant figure, estimate the area of this trapezium.



## Week 6: Day 5 Answers

- 1) Generate the first 5 terms of the sequence with position to term rule

$$5n - 6 \quad -1, 4, 9, 14, 19$$

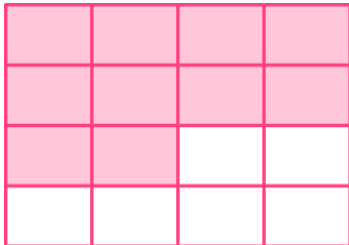
- 2) Write the decimal as a fraction in its simplest form:

$$0.625 = \frac{5}{8}$$

- 3) Fill in the missing numbers:

-1, 7, 15, 23, 31, ...

- 4) Use shading to indicate the ratio 5:3 for shaded to unshaded.

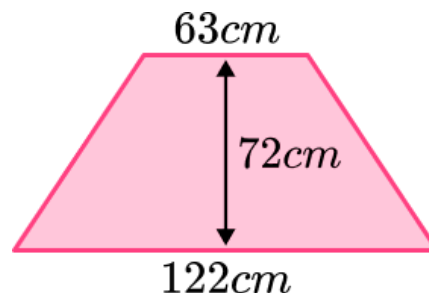


Any 10 shaded boxes, e.g.

- 5) By first rounding to one significant figure, estimate the area of this trapezium.

$$\frac{1}{2}(60 + 100) \times 70$$

$$5600 \text{ cm}^2$$



*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](https://thirdspacelearning.com) to find out more.