

Week 9

This week in a nutshell:

Questions 1, 2 & 3 focus on skills that form part of the mathematical toolkit, and in fact are predominantly computational. Question 4 covers area and perimeter, so be aware that misconceptions in terms of method and understanding frequently arise; take time to address any difficulties. Question 5 involves looking at Venn diagrams, where it is worth emphasising the mechanics of how these useful representations work.

Question 1: Fraction arithmetic

Question 2: Multiplying by a single digit

Question 3: Finding the n^{th} term

Question 4: Area and perimeter

Question 5: Using Venn diagrams

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: **Fraction arithmetic**

- Summarise the methods for performing the four operations with fractions.

Question 2: **Multiplying by a single digit**

- Does multiplying by a single digit necessarily make the calculation easier? Why do you think this?

Question 3: **Finding the n^{th} term**

- Is the n^{th} term unique?

Question 4: **Area and perimeter**

- How do you remember the difference between area and perimeter?
- How are the units different for area and perimeter?

Question 5: **Using Venn diagrams**

- Why do you think Venn diagrams were invented?

Week 9: Day 1

1) Calculate:

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

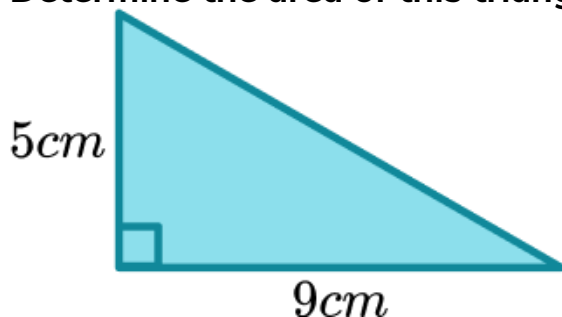
2) Work out:

$$18 \times 6 =$$

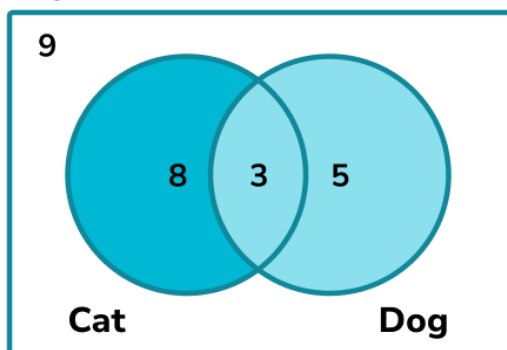
3) Find the n^{th} term:

4, 7, 10, 13, 16, ...

4) Determine the area of this triangle.



5) The Venn diagram shows how many students from Class 8A own a cat or dog. How many students owned a cat?



Week 9: Day 1 Answers

1) Calculate:

$$\frac{1}{3} + \frac{1}{5} = \frac{8}{15}$$

2) Work out:

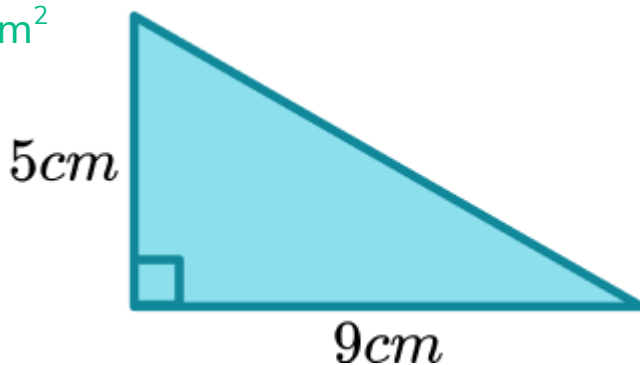
$$18 \times 6 = 108$$

3) Find the n^{th} term:

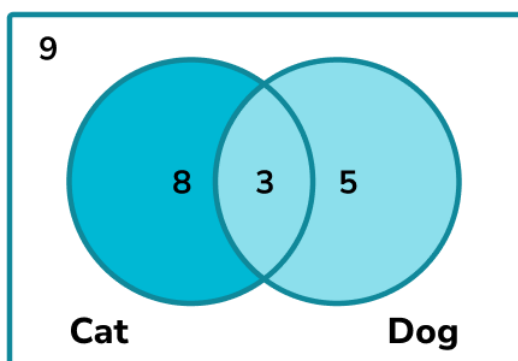
$$4, 7, 10, 13, 16, \dots \quad 3n + 1$$

4) Determine the area of this triangle.

$$22.5\text{cm}^2$$



5) The Venn diagram shows how many students from Class 8A own a cat or dog. How many students owned a cat?



$$11$$

Week 9: Day 2

1) Calculate:

$$\frac{5}{6} - \frac{2}{3} =$$

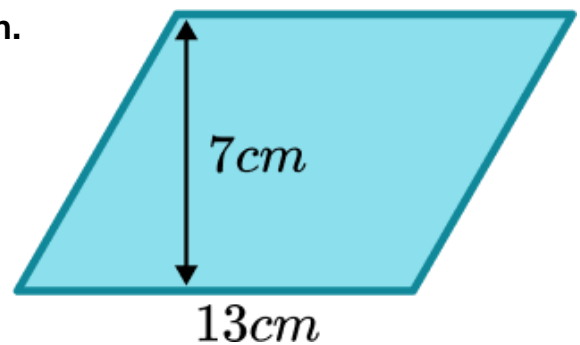
2) Work out:

$$7 \times 28 =$$

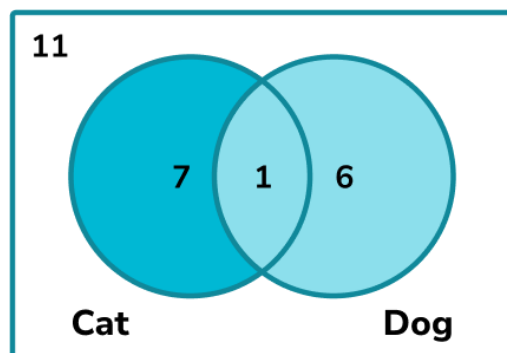
3) Find the n^{th} term:

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

4) Determine the area of this parallelogram.



5) The Venn diagram shows how many students from Class 7C own a cat or dog. How many students owned neither a cat or a dog?



Week 9: Day 2 Answers

1) Calculate:

$$\frac{5}{6} - \frac{2}{3} = \frac{1}{6}$$

2) Work out:

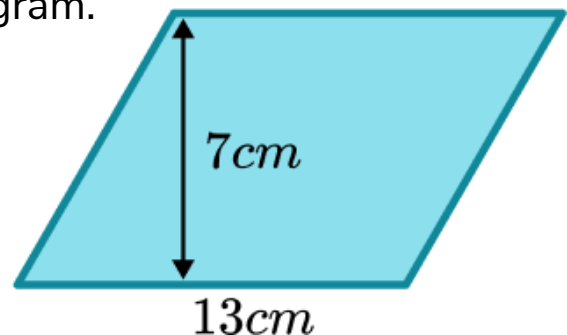
$$7 \times 28 = 196$$

3) Find the n^{th} term:

$$14, 11, 8, 5, 2, \dots \quad 17 - 3n$$

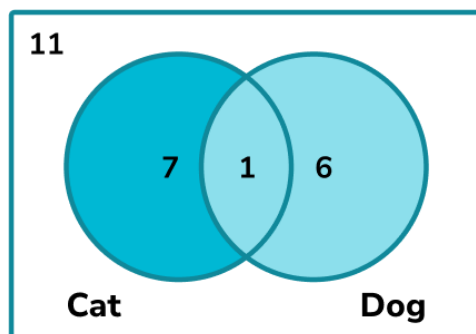
4) Determine the area of this parallelogram.

$$91\text{cm}^2$$



5) The Venn diagram shows how many students from Class 7C own a cat or dog. How many students owned neither a cat or a dog?

$$11$$



Week 9: Day 3

1) Calculate:

$$\frac{2}{7} \times \frac{7}{8} =$$

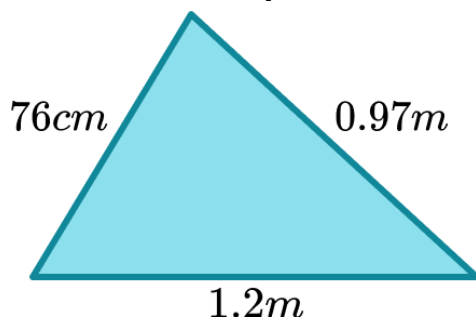
2) Work out:

$$9 \times 42 =$$

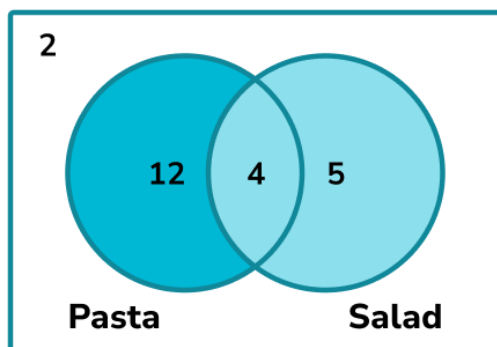
3) Find the n^{th} term:

-3, 0, 3, 6, 9, ...

4) Determine the perimeter of this triangle.



5) The Venn diagram shows how many students from Class 9A had pasta or salad at lunch. How many students had pasta and salad?



Week 9: Day 3 Answers

1) Calculate:

$$\frac{2}{7} \times \frac{7}{8} = \frac{1}{4}$$

2) Work out:

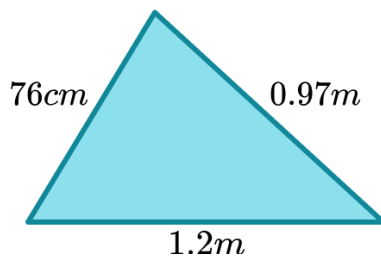
$$9 \times 42 = 378$$

3) Find the n^{th} term:

$$-3, 0, 3, 6, 9, \dots \quad 3n - 6$$

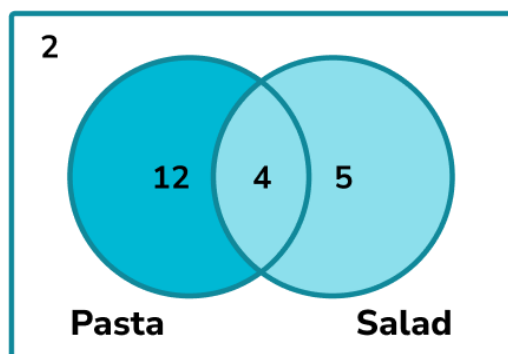
4) Determine the perimeter of this triangle.

2.93m or 293cm



5) The Venn diagram shows how many students from Class 9A had pasta or salad at lunch. How many students had pasta and salad?

4



Week 9: Day 4

1) Calculate:

$$\frac{4}{5} \div \frac{2}{3} =$$

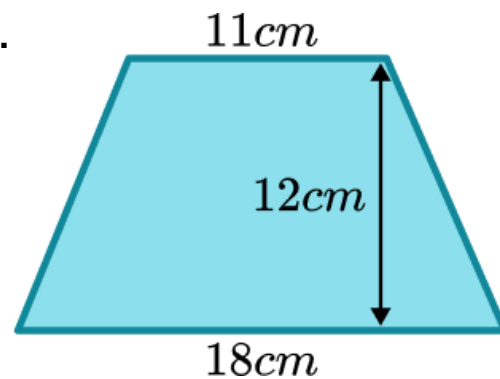
2) Work out:

$$6 \times 157 =$$

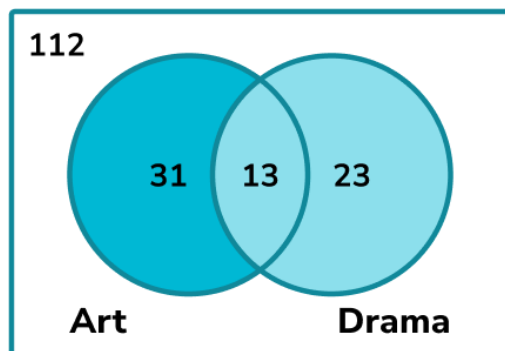
3) Find the n^{th} term:

2.5, 5, 7.5, 10, 12.5, ...

4) Determine the area of this trapezium.



5) The Venn diagram shows how many students from Year 10 study art or drama. How many students study art?



Week 9: Day 4 Answers

1) Calculate:

$$\frac{4}{5} \div \frac{2}{3} = \frac{6}{5} \text{ or } 1\frac{1}{5}$$

2) Work out:

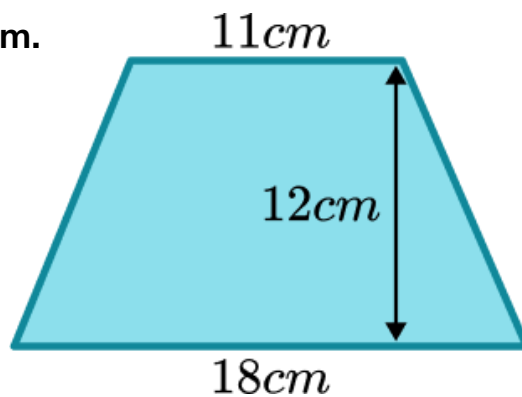
$$6 \times 157 = 942$$

3) Find the n^{th} term:

$$2.5, 5, 7.5, 10, 12.5, \dots \quad 2.5n$$

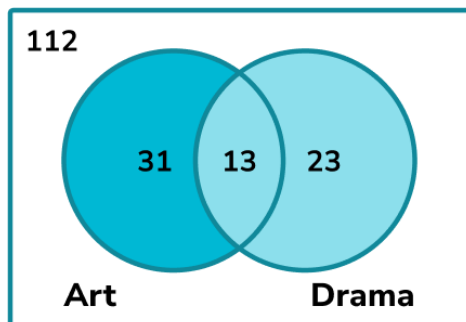
4) Determine the area of this trapezium.

$$174\text{cm}^2$$



5) The Venn diagram shows how many students from Year 10 study art or drama. How many students study art?

$$44$$



Week 9: Day 5

1) Calculate:

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

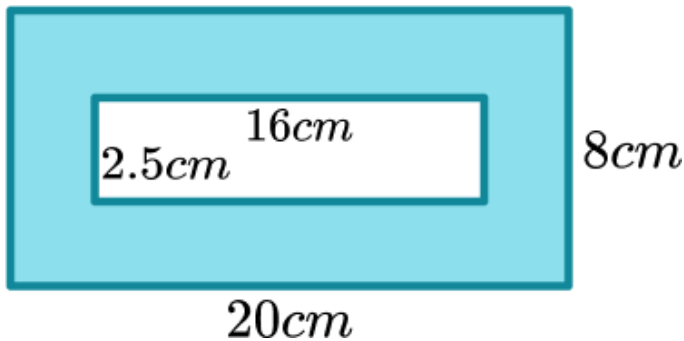
2) Work out:

$$252 \times 8 =$$

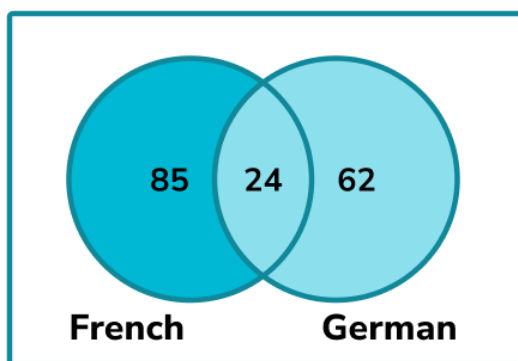
3) Find the n^{th} term:

2, 6, 10, 14, 18, ...

4) Determine the area of the shaded region.



5) The Venn diagram shows how many students from Year 11 study French or German. How many students study German?



Week 9: Day 5 Answers

1) Calculate:

$$\frac{2}{5} - \frac{2}{3} + \frac{1}{2} = \frac{7}{30}$$

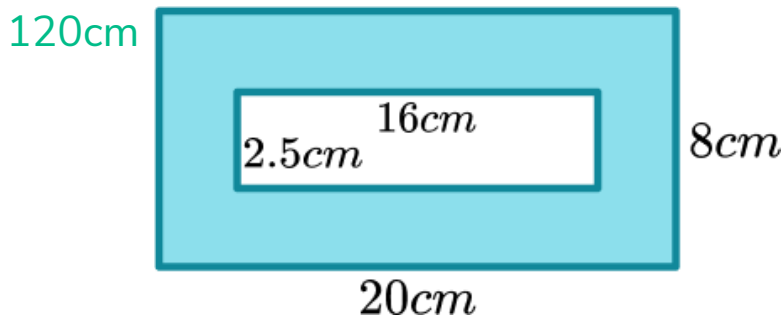
2) Work out:

$$252 \times 8 = 2016$$

3) Find the n^{th} term:

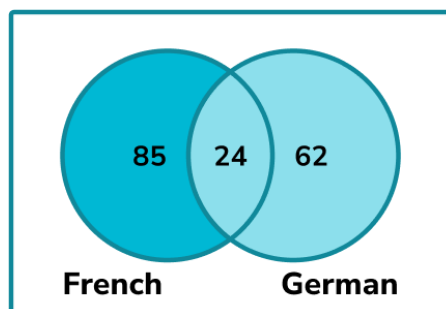
$$2, 6, 10, 14, 18, \dots \quad 4n - 2$$

4) Determine the area of the shaded region.



5) The Venn diagram shows how many students from Year 11 study French or German. How many students study German?

86



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.