

Week 7

This week in a nutshell:

This week is the start of the final half term of Key Stage 3, so all material has been seen in some way before. Confidence and accuracy should be a priority for the rest of the summer. Different approaches can be taken to question 5, and as such you may like some students to compare/contrast the ways these questions can be answered.

Question 1: Arithmetic with decimals

Question 2: Collecting like terms

Question 3: Sharing and using ratio

Question 4: Volume

Question 5: Interior/exterior 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: **Arithmetic with decimals**

- Does the number of decimal places alter how you perform a calculation?

Question 2: **Collecting like terms**

- *reflect on previous learning*

Question 3: **Sharing and using ratio**

- How many different ways of "sharing" have you used in maths?
- How do these methods relate to how you share things in life?

Question 4: **Volume**

- How could you find the volume of an object using a graduated tank of water?

Question 5: **Interior/exterior angles**

- What relationships do interior and exterior angles have?
- To what extent are the rules for interior and exterior angles interchangeable?

Week 7: Day 1

1) **Work out:**

a) $1.4 + 2.7 =$

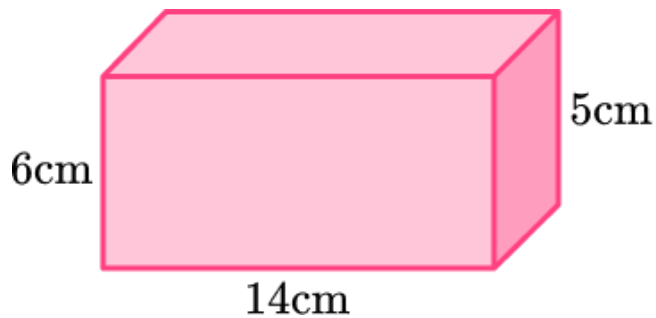
b) $1.9 \times 3 =$

2) **Simplify:**

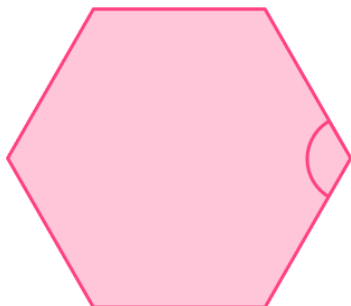
$$3a + a - 2a + 4a$$

3) **Find the larger portion when £63 is shared in the ratio 4:5**

4) **Find the volume of the cuboid.**



5) **Pictured is a regular hexagon. Find the size of the marked interior angle.**



Week 7: Day 1 Answers

1) **Work out:**

a) $1.4 + 2.7 = 4.1$

b) $1.9 \times 3 = 5.7$

2) **Simplify:**

$$3a + a - 2a + 4a = 6a$$

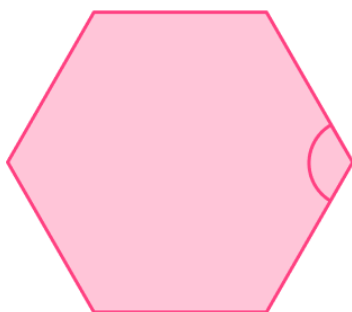
3) **Find the larger portion when £63 is shared in the ratio 4:5** £35

4) **Find the volume of the cuboid.** 420cm^3



5) **Pictured is a regular hexagon. Find the size of the marked interior angle.**

120°



Week 7: Day 2

1) **Work out:**

a) $5.9 - 1.65 =$

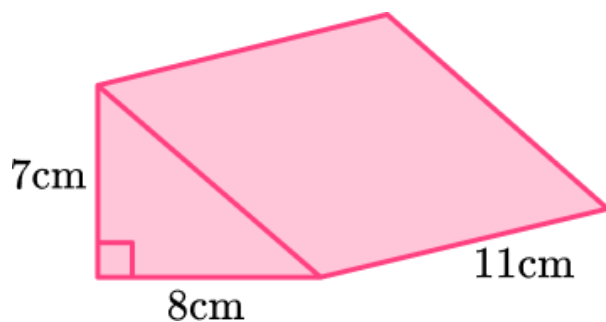
b) $2.3 + 4.07 =$

2) **Simplify:**

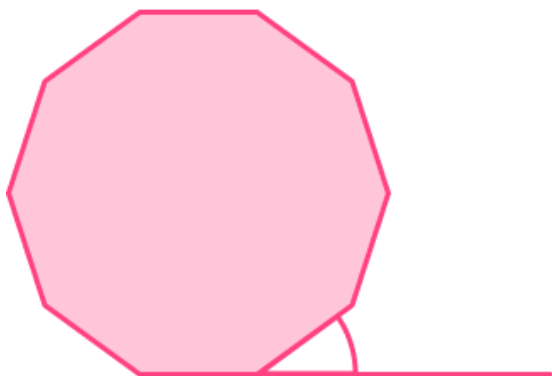
$$5b - 2b - (3b - 4b)$$

3) **Find the smaller portion when €120 is shared in the ratio 2:3**

4) **Find the volume of the triangular prism.**



5) **Pictured is a regular decagon. Find the size of the marked exterior angle.**



Week 7: Day 2 Answers

1) **Work out:**

a) $5.9 - 1.65 = 4.25$

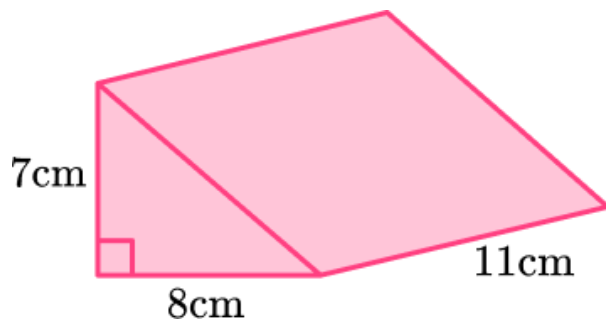
b) $2.3 + 4.07 = 6.37$

2) **Simplify:**

$$5b - 2b - (3b - 4b) = 4b$$

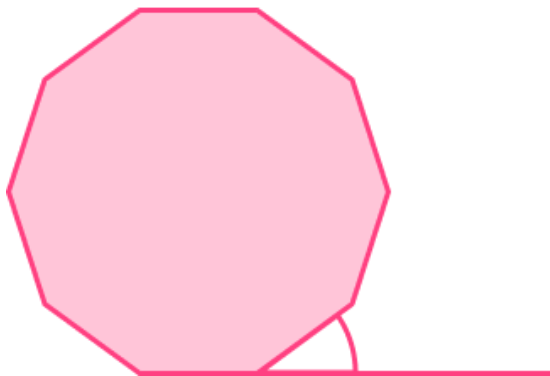
3) **Find the smaller portion when €120 is shared in the ratio 2:3** €48

4) **Find the volume of the triangular prism.** 308cm^3



5) **Pictured is a regular decagon. Find the size of the marked exterior angle.**

36°



Week 7: Day 3

1) **Work out:**

a) $4 \times 2.6 =$

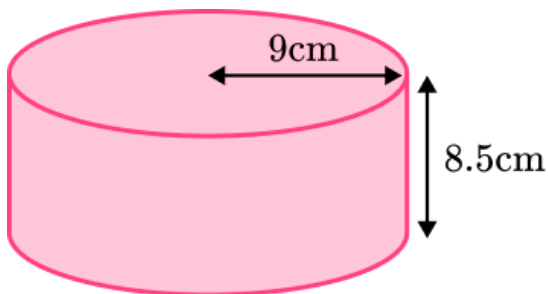
b) $10.3 - 7.6 =$

2) **Simplify:**

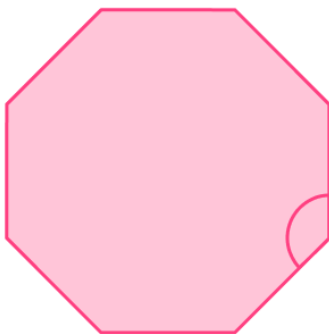
$$7b - a - 4b + 3a$$

3) **Find the larger portion when 2.4kg is shared in the ratio 1:7**

4) **Find the volume of the cylinder. Give your answer rounded to one decimal place.**



5) **Pictured is a regular octagon. Find the size of the marked interior angle.**



Week 7: Day 3 Answers

1) **Work out:**

a) $4 \times 2.6 = 10.4$

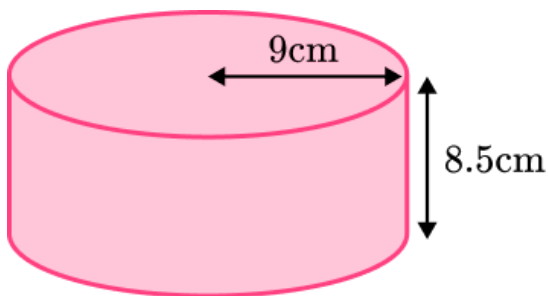
b) $10.3 - 7.6 = 2.7$

2) **Simplify:**

$$7b - a - 4b + 3a = 2a + 3b$$

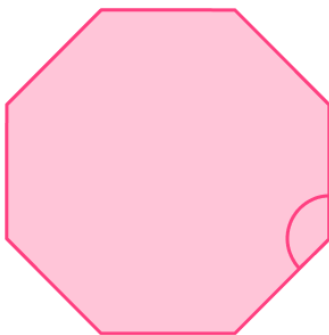
3) **Find the larger portion when 2.4kg is shared in the ratio 1:7** 2.1kg

4) **Find the volume of the cylinder. Give your answer rounded to one decimal place.** 2163.0 kg



5) **Pictured is a regular octagon. Find the size of the marked interior angle.**

135°



Week 7: Day 4

1) **Work out:**

a) $2.2 \times 0.4 =$

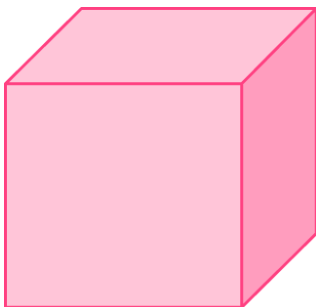
b) $4 \div 0.08 =$

2) **Simplify:**

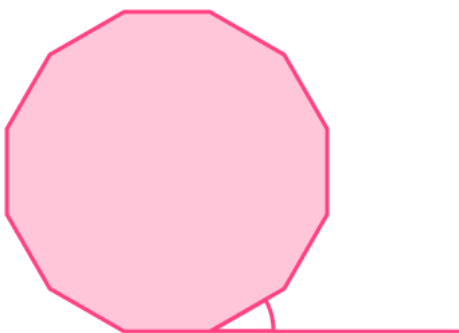
$$a + a^2 - 2a + 3a^2$$

3) **Find the smallest portion when £1250 is shared in the ratio 2:3:5**

4) **Given that the area of one face of the cube below is 16cm^2 , find the volume of the cube.**



5) **Pictured is a regular dodecagon. Find the size of the marked exterior angle.**



Week 7: Day 4 Answers

1) **Work out:**

a) $2.2 \times 0.4 = 0.88$

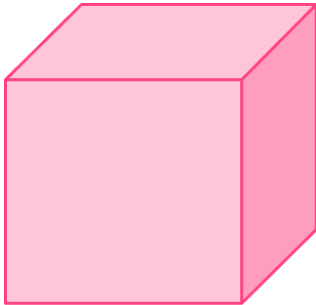
b) $4 \div 0.08 = 50$

2) **Simplify:**

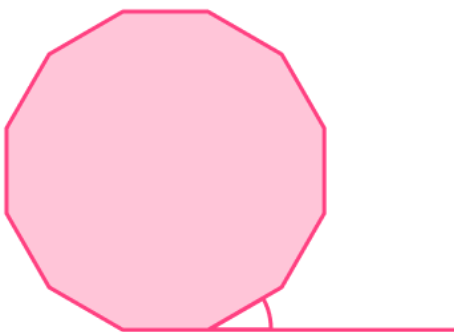
$$a + a^2 - 2a + 3a^2 = 4a^2 - a$$

3) **Find the smallest portion when £1250 is shared in the ratio 2:3:5** £250

4) **Given that the area of one face of the cube below is 16cm^2 , find the volume of the cube.** 64cm^3



5) **Pictured is a regular dodecagon. Find the size of the marked exterior angle.** 30°



Week 7: Day 5

1) **Work out:**

a) $8.1 \div 9 =$

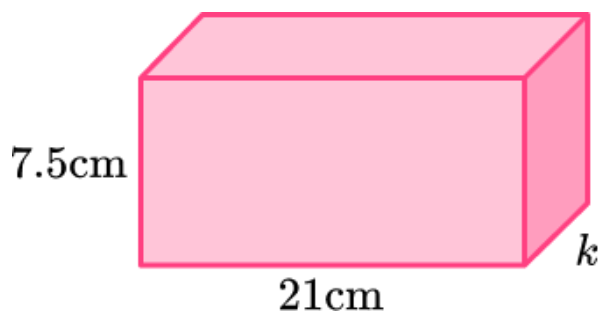
b) $0.3 \times 0.7 =$

2) **Simplify:**

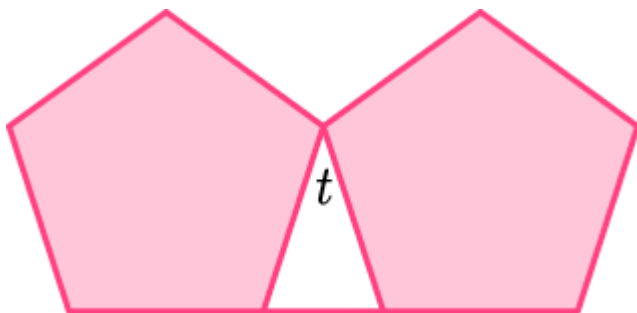
$$8 - 3a - 2a + 1$$

3) **Find the largest portion when \$108 is shared in the ratio 1:3:5**

4) **The volume of this cuboid is 945 cm^3 . What is the length of edge k ?**



5) **Two congruent regular pentagons are positioned as pictured. Find the size of angle t .**



Week 7: Day 5 Answers

1) **Work out:**

a) $8.1 \div 9 = 0.9$

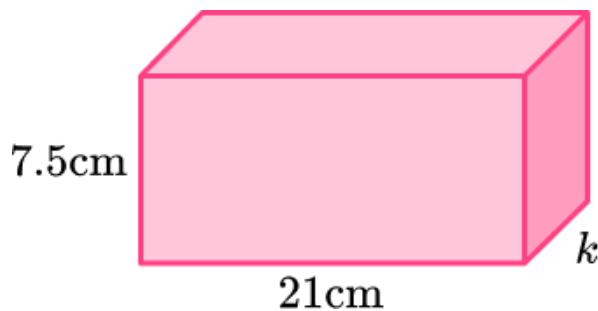
b) $0.3 \times 0.7 = 0.21$

2) **Simplify:**

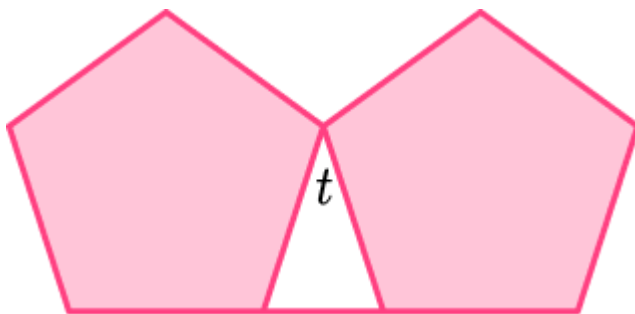
$$8 - 3a - 2a + 1 = 9 - 5a$$

3) **Find the largest portion when \$108 is shared in the ratio 1:3:5** \$60

4) **The volume of this cuboid is 945 cm^3 . What is the length of edge k ?** 6cm



5) **Two congruent regular pentagons are positioned as pictured. Find the size of angle t .** 36°



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