

Week 9

This week in a nutshell:

Students should be confident to get started on Q1 independently. A quick reminder of what factors are should enable students to successfully attempt Q2. Allow them time to think about how they will layout their answers efficiently rather than showing them on this occasion. Q3 continues the work on solving equations which started in weeks 3 and 4. Emphasise again to students the importance of showing their method in algebra. Get creative with Q4 and ask students to bring in pictures or photos of shapes/objects with high orders of rotational symmetry. An example may be required before some students are able to tackle Q5. Remind students to write the units for their answers.

Question 1: Rounding

Question 2: Listing factors

Question 3: Solving equations

Question 4: Rotational symmetry

Question 5: Using volume

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: Rounding

- **98.2 to the nearest ten is 100. Discuss this answer. Think about how many tens there are in 100.**

Question 2: Listing factors

- **Listing factors in pairs is a good method to ensure you do not miss any out. Design a way to layout your answers so that you can write factors in pairs first and then factors in ascending order in the most efficient way.**

Question 3: Solving equations

- **To solve $5(x + 4) = 35$ would you first expand the brackets or divide by 5? Solve the equation both ways and then discuss the advantages of each method.**

Question 4: Rotational symmetry

- **Challenge: Which letters of the alphabet have rotational symmetry of order 2 or higher?**

Question 5: Using volume

- **Task: Practise your 3D drawing skills. Try to draw a cube, cuboid, triangular prism and cylinder.**

Week 9: Day 1

- 1) Round to the nearest integer:

13.843

- 2) List the factors of 18 in ascending order.
-

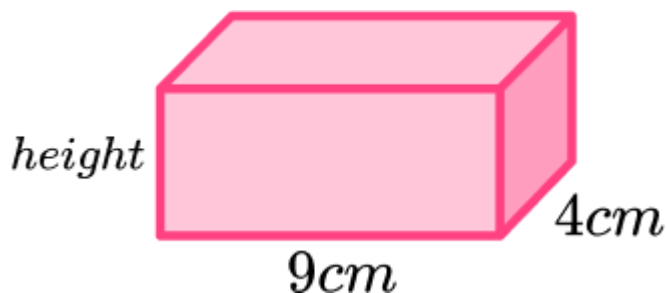
- 3) Solve:

$$4 - x = 9$$

- 4) What is the order of rotational symmetry of this shape?



- 5) The volume of this cuboid is 180cm^3 . What is the height of the cuboid?



Week 9: Day 1 Answers

- 1) Round to the nearest integer: 14

13.843

- 2) List the factors of 18 in ascending order. 1, 2, 3, 6, 9, 18
-

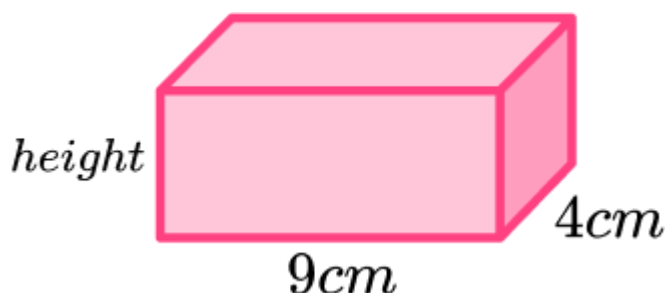
- 3) Solve:

$$4 - x = 9 \quad x = -5$$

- 4) What is the order of rotational symmetry of this shape? 6



- 5) The volume of this cuboid is 180cm^3 . What is the height of the cuboid?



5cm

Week 9: Day 2

- 1) Round to the nearest ten:

2 885

- 2) List the factors of 40 in ascending order.
-

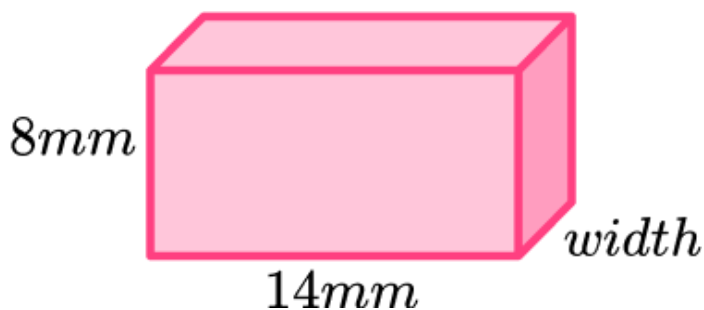
- 3) Solve:

$$3(x + 1) = 9$$

- 4) What is the order of rotational symmetry of this shape?



- 5) The volume of this cuboid is 336mm^3 . What is the width of the cuboid?



Week 9: Day 2 Answers

- 1) Round to the nearest ten:

2 885

2 890

- 2) List the factors of 40 in ascending order. 1, 2, 4, 5, 8, 10, 20, 40

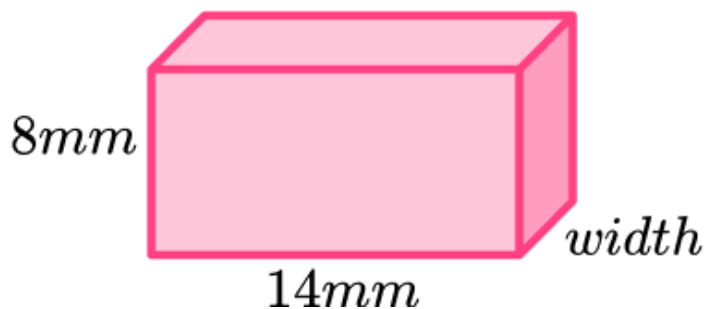
- 3) Solve:

$$3(x + 1) = 9 \quad x = 2$$

- 4) What is the order of rotational symmetry of this shape? 2



- 5) The volume of this cuboid is 336mm^3 . What is the width of the cuboid?



3mm

Week 9: Day 3

- 1) Round to the nearest thousand:

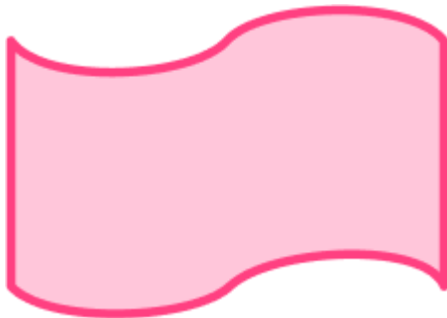
12 498

- 2) List the factors of 52 in ascending order.
-

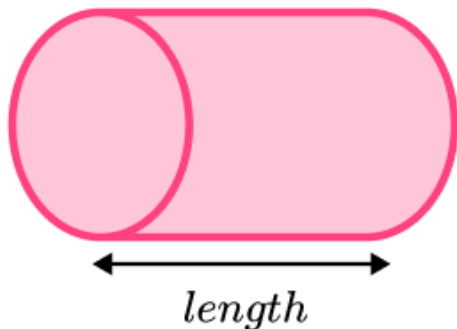
- 3) Solve:

$$5x - 1 = 7$$

- 4) What is the order of rotational symmetry of this shape?



- 5) The volume of this cylinder is 325cm^3 . The area of the cross-section is 25cm^2 . What is the length of the cylinder?



Week 9: Day 3 Answers

- 1) Round to the nearest thousand:

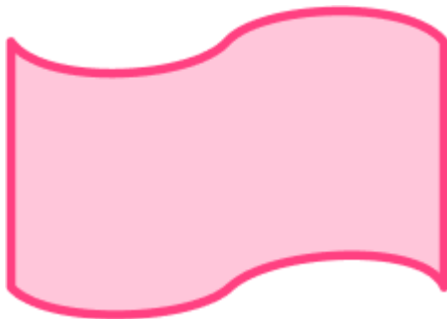
12 498 12 000

- 2) List the factors of 52 in ascending order. 1, 2, 4, 13, 26, 52

- 3) Solve:

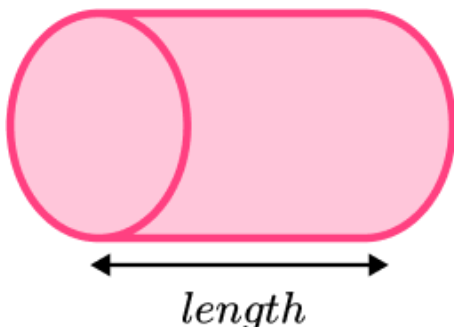
$$5x - 1 = 7 \quad x = 1.6$$

- 4) What is the order of rotational symmetry of this shape? 2



- 5) The volume of this cylinder is 325cm^3 . The area of the cross-section is 25cm^2 . What is the length of the cylinder?

13cm



Week 9: Day 4

- 1) Round to the nearest hundred:

9 367.66

- 2) List the factors of 90 in ascending order.

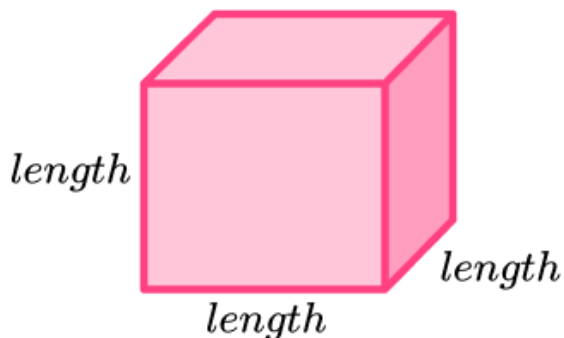
- 3) Solve:

$$\frac{x}{2} - 3 = 8$$

- 4) What is the order of rotational symmetry of this shape?



- 5) What is the edge length of this cube, which has volume 343cm^3 ?



Week 9: Day 4 Answers

- 1) Round to the nearest hundred:

9 367.66

9 400

- 2) List the factors of 90 in ascending order.

1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90

- 3) Solve:

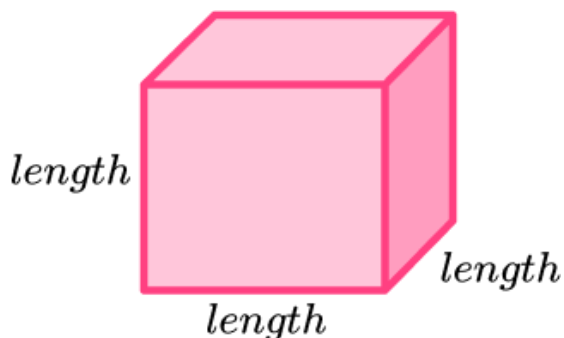
$$\frac{x}{2} - 3 = 8 \quad x = 22$$

- 4) What is the order of rotational symmetry of this shape?



4

- 5) What is the edge length of this cube, which has volume 343cm^3 ?



7m

Week 9: Day 5

- 1) Round to the nearest hundred:

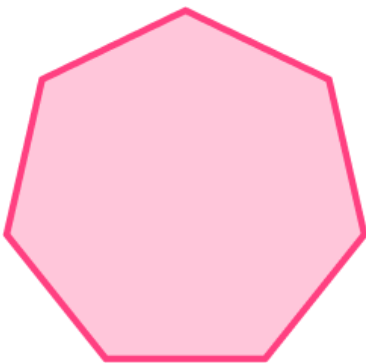
52 972

- 2) List the factors of 135 in ascending order.

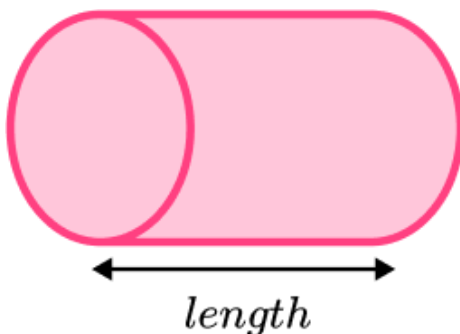
- 3) Solve:

$$7 + 2x = 3$$

- 4) What is the order of rotational symmetry of this shape?



- 5) The volume of this cylinder is 255cm^3 . The length of the cylinder is 15cm . What is the area of the cross-section of the cylinder?



Week 9: Day 5 Answers

- 1) Round to the nearest hundred:

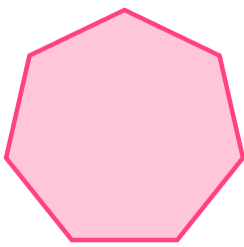
52 972 53 000

- 2) List the factors of 135 in ascending order. 1, 3, 5, 9, 15, 27, 45, 135

- 3) Solve:

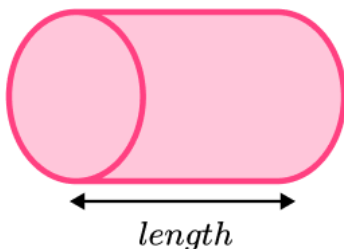
$$7 + 2x = 3 \quad x = -2$$

- 4) What is the order of rotational symmetry of this shape?



7

- 5) The volume of this cylinder is 255cm^3 . The length of the cylinder is 15cm . What is the area of the cross-section of the cylinder?



17cm^2

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