

Week 12

This week in a nutshell:

For the final week of the term, all topics covered should be familiar to the student. Consequently you may choose to encourage timings should this be appropriate for the students. There is also room for extension by asking students to justify their steps in question 3. You may want some students to comment on their estimate for question 2, as this is also a useful skill to develop for some contextual questions.

Question 1: Completing sequences

Question 2: Estimating calculations

Question 3: Linear equations with brackets

Question 4: Rotational symmetry

Question 5: Points and lines

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: **Completing sequences**

- What is your favourite method for finding missing terms in sequences?

Question 2: **Estimating calculations**

- How does the estimate change depending on the degree of accuracy we round to?
- Is it better to overestimate or underestimate? Why?

Question 3: **Linear equations with brackets**

- How does the distributive law help when solving equations with brackets?

Question 4: **Rotational symmetry**

- Can you think of a shape with no rotational symmetry?

Question 5: **Points and lines**

- Why might it be important to verify whether a line passes through a point?
- Is it always possible to draw a line through two points? Three points? Four points?

Week 12: Day 1

- 1) Fill in the missing numbers in this sequence:

2, 6, 10, 14, __, __, ...

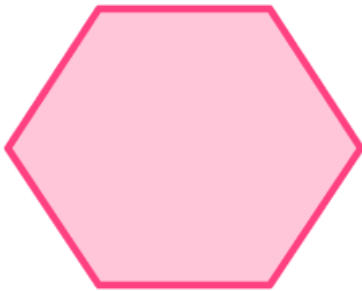
- 2) Estimate:

7.2×11.18

- 3) Solve for x

$$3(x + 2) = 21$$

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



- 5) Here are three points in the x-y plane:

A(-2, -5)

B(3, 7)

C(10, 11)

The line with equation $y = 2x + 1$ passes through which one of these points?

Week 12: Day 1 Answers

- 1) Fill in the missing numbers in this sequence:

2, 6, 10, 14, 18, 22, ...

- 2) Estimate:

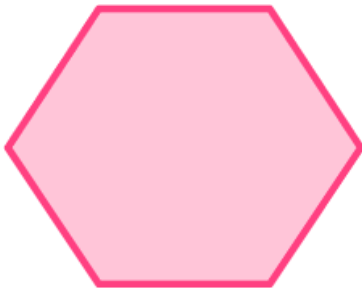
$$7.2 \times 11.18 \approx 7 \times 10 \\ \approx 70$$

- 3) Solve for x

$$3(x + 2) = 21 \qquad x = 5$$

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

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- 5) Here are three points in the x-y plane:

A(-2, -5)

B(3, 7)

C(10, 11)

The line with equation $y = 2x + 1$ passes through which one of these points?

Week 12: Day 2

- 1) Fill in the missing numbers in this sequence:

23, __, 7, -1, __, ...

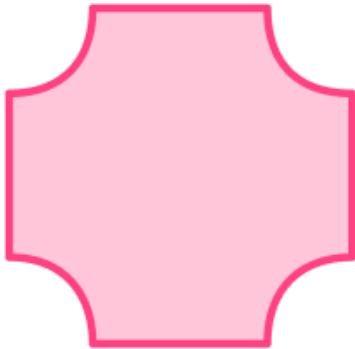
- 2) Estimate:

$48.744 \div 9.73$

- 3) Solve for x

$$4(x + 5) = 16$$

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



- 5) Here are three points in the x-y plane:

A(5, -3)

B(-4, 7)

C(4, -7)

The line with equation $y = 5 - 3x$ passes through which one of these points?

Week 12: Day 2 Answers

- 1) Fill in the missing numbers in this sequence:

23, 15, 7, -1, -9, ...

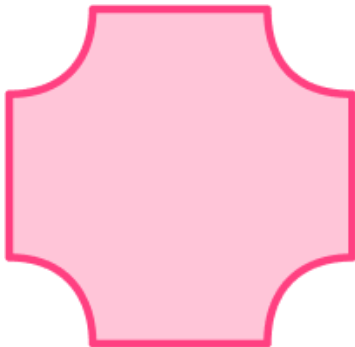
- 2) Estimate:

$$48.744 \div 9.73 \approx 50 \div 10 \\ \approx 5$$

- 3) Solve for x

$$4(x + 5) = 16 \qquad x = -1$$

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



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- 5) Here are three points in the x-y plane:

A(5, -3)

B(-4, 7)

C(4, -7)

The line with equation $y = 5 - 3x$ passes through which one of these points?

Week 12: Day 3

- 1) Fill in the missing numbers in this sequence:

___, ___, 7, 13, 19, ...

- 2) Estimate:

$$11.8 \times 12.16$$

- 3) Solve for x

$$5(2x + 3) = 35$$

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



- 5) Here are three points in the x-y plane:

A(-2, -7)

B(3, 7)

C(3, 10)

The line with equation $y = 3x - 1$ passes through which one of these points?

Week 12: Day 3 Answers

- 1) Fill in the missing numbers in this sequence:

-5, 1, 7, 13, 19, ...

- 2) Estimate:

$$11.8 \times 12.16 \approx 10 \times 10 \\ \approx 100$$

- 3) Solve for x

$$5(2x + 3) = 35 \qquad x = 2$$

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



- 5) Here are three points in the x-y plane:

$A(-2, -7)$ $B(3, 7)$ $C(3, 10)$

The line with equation $y = 3x - 1$ passes through which one of these points?

Week 12: Day 4

- 1) Fill in the missing numbers in this sequence:

8, 15, __, __, 36, ...

- 2) Estimate:

$$1154 \div 22.15$$

- 3) Solve for x

$$6(4x + 1) = 18$$

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



- 5) Here are three points in the x-y plane:

A(10, -7)

B(10, 13)

C(10, 7)

The line with equation $x - y + 3 = 0$ passes through which one of these points?

Week 12: Day 4 Answers

- 1) Fill in the missing numbers in this sequence:

8, 15, 22, 29, 36, ...

- 2) Estimate:

$$1154 \div 22.15 \approx 1000 \div 20 \\ \approx 50$$

- 3) Solve for x

$$6(4x + 1) = 18 \qquad x = \frac{1}{2} \text{ or } 0.5$$

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



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- 5) Here are three points in the x-y plane:

A(10, -7)

B(10, 13)

C(10, 7)

The line with equation $x - y + 3 = 0$ passes through which one of these points?

Week 12: Day 5

- 1) Fill in the missing numbers in this sequence:

5, __, 12, __, 19, ...

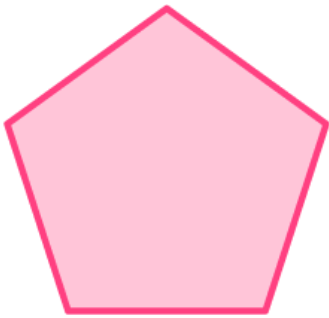
- 2) Estimate:

216×4.88

- 3) Solve for x

$$2(3x + 5) = 19$$

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



- 5) Here are three points in the x-y plane:

A(-2, -8)

B(2, -10)

C(-2, 10)

The line with equation $x + y = 8$ passes through which one of these points?

Week 12: Day 5 Answers

- 1) Fill in the missing numbers in this sequence:

5, 8.5, 12, 15.5, 19, ...

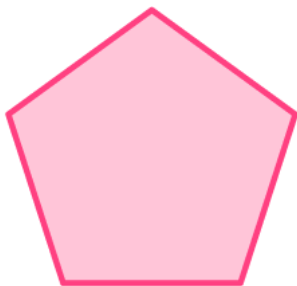
- 2) Estimate:

$$216 \times 4.88 \approx 200 \times 5 \\ \approx 1000$$

- 3) Solve for x

$$2(3x + 5) = 19 \qquad x = 1.5$$

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



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- 5) Here are three points in the x-y plane:

A(-2, -8)

B(2, -10)

C(-2, 10)

The line with equation $x + y = 8$ passes through which one of these points?

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