

Week 3

This week in a nutshell:

This week, the topics for questions 1, 2 and 3 move on from the recently covered material. Students should have a good level of confidence to access the questions here, with prompts being kept to a minimum.

Question 1: Simplifying ratio

Question 2: Error intervals

Question 3: Generating a sequence

Question 4: Types of data

Question 5: Rotation

It is possible that students will need to be reminded of what types of data occur and how to recognise them. You may wish to cover some of the technical aspects of dealing with rotations prior to starting the questions in order to boost the students' confidence in accessing the topic.

This week's ideas for class discussion include:

Question 1: **Simplifying ratio**

- Why might we want a ratio in its simplest form?
- Can you think of times when we would not want ratios in their simplest form?

Question 2: **Error intervals**

- Why do error intervals contain a strong and a weak inequality?

Question 3: **Generating a sequence**

- Pick a sequence; how many ways can you find to describe how it could be generated?

Question 4: **Types of data**

- Into which data types does all your personal data fall?
- "Big data" is now big business. What is "big data" and how do you think it is used?

Question 5: **Rotation**

- If we didn't have clocks, how would you describe clockwise and anticlockwise?

Week 3: Day 1

1) Express the ratio in its simplest terms:

a) 8:4

b) 3:12

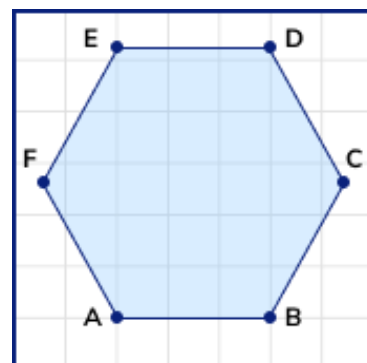
2) A number n is 130, rounded to the nearest 10. Complete the error interval:

_____ $\leq n <$ _____

3) Generate the first five terms of a sequence given that the first term is 3 and the term to term rule is “add 5”.

4) Shoe size is an example of which type of data?

5) What is the order of rotational symmetry for this regular hexagon?



Week 3: Day 1 Answers

1) Express the ratio in its simplest terms:

a) $8:4$
 $2:1$

b) $3:12$
 $1:4$

2) A number n is 130, rounded to the nearest 10. Complete the error interval:

$$125 \leq n < 135$$

3) Generate the first five terms of a sequence given that the first term is 3 and the term to term rule is “add 5”.

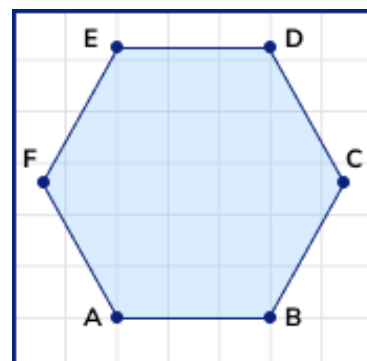
3, 8, 13, 18, 23

4) Shoe size is an example of which type of data?

Discrete data

5) What is the order of rotational symmetry for this regular hexagon?

6



Week 3: Day 2

1) Express the ratio in its simplest terms:

a) $16:4$

b) $15:10$

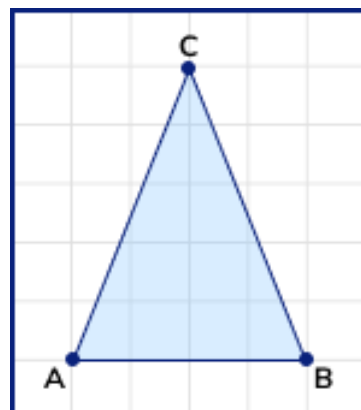
2) A number t is 4800, rounded to the nearest 100. Complete the error interval:

$$\underline{\hspace{2cm}} \leq t < \underline{\hspace{2cm}}$$

3) Generate the first five terms of a sequence given that the first term is 31 and the term to term rule is “subtract 4”.

4) Height is an example of which type of data?

5) What is the order of rotational symmetry for this triangle?



Week 3: Day 2 Answers

1) Express the ratio in its simplest terms:

a) $16:4$
 $4:1$

b) $15:10$
 $3:2$

2) A number t is 4800, rounded to the nearest 100. Complete the error interval:

$$4750 \leq t < 4850$$

3) Generate the first five terms of a sequence given that the first term is 31 and the term to term rule is “subtract 4”.

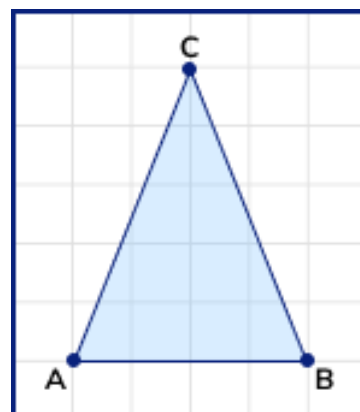
31, 27, 23, 19, 15

4) Height is an example of which type of data?

Continuous data

5) What is the order of rotational symmetry for this triangle?

1



Week 3: Day 3

1) Express the ratio in its simplest terms:

a) $18:9:6$

b) $8:12:20$

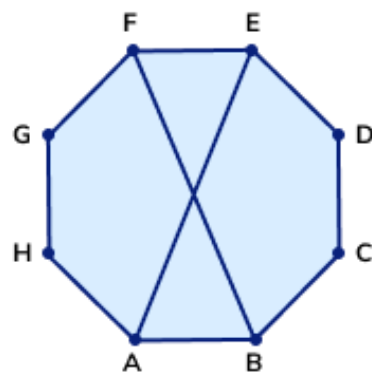
2) A number w is 0.02, rounded to the nearest hundredth. Complete the error interval:

$$\underline{\hspace{2cm}} \leq w < \underline{\hspace{2cm}}$$

3) Generate the first five terms of a sequence given that the first term is 48 and the term to term rule is “divide by 2”.

4) Favourite colour is an example of which type of data?

5) What is the order of rotational symmetry for the object pictured below?



Week 3: Day 3 Answers

1) Express the ratio in its simplest terms:

a) $18:9:6$
 $6:3:2$

b) $8:12:20$
 $2:3:5$

2) A number w is 0.02, rounded to the nearest hundredth. Complete the error interval:

$$0.015 \leq w < 0.025$$

3) Generate the first five terms of a sequence given that the first term is 48 and the term to term rule is "divide by 2".

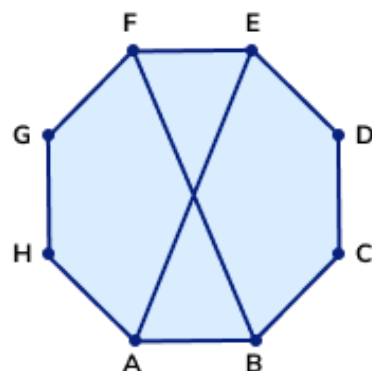
48, 24, 12, 6, 3

4) Favourite colour is an example of which type of data?

Categorical (Qualitative)

5) What is the order of rotational symmetry for the object pictured below?

2



Week 3: Day 4

1) Express in the form $1:n$

a) 7:343

b) 6:33

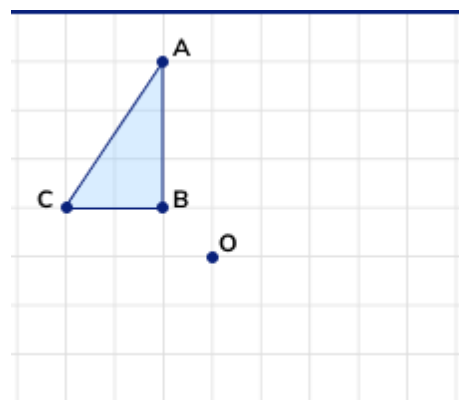
2) A number k is 3700, rounded to 2 significant figures. Complete the error interval:

_____ $\leq k <$ _____

3) Generate the first five terms of a sequence given that the second term is 8 and the term to term rule is “add 3”.

4) Number of siblings is an example of which type of data?

5) Rotate the triangle 90° clockwise about point O .



Week 3: Day 4 Answers

1) Express in the form $1:n$

a) 7:343
1:49

b) 6:33
1:5.5

2) A number k is 3700, rounded to 2 significant figures. Complete the error interval:

$$3650 \leq k < 3750$$

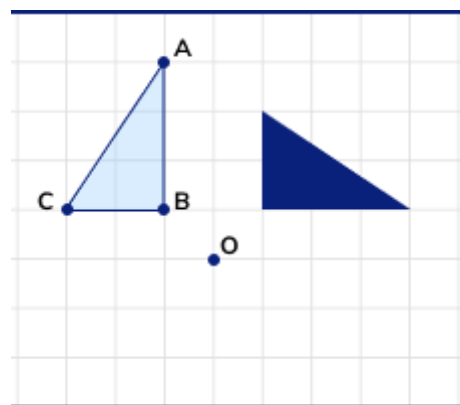
3) Generate the first five terms of a sequence given that the second term is 8 and the term to term rule is "add 3".

5, 8, 11, 14, 17

4) Number of siblings is an example of which type of data?

Discrete data

5) Rotate the triangle 90° clockwise about point O .



Week 3: Day 5

1) Express in the form $1:n$

a) $0.5:2.5$

b) $0.25:1.75$

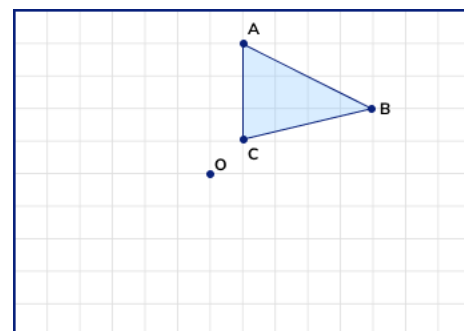
2) A height h is 5.4cm, rounded to the nearest mm. Complete the error interval:

$$\underline{\hspace{2cm}} \leq h < \underline{\hspace{2cm}}$$

3) Generate the first five terms of a sequence given that the third term is 16 and the term to term rule is “multiply by 2”.

4) Temperature is an example of which type of data?

5) Rotate the triangle 180° clockwise about point O .



Week 3: Day 5 Answers

1) Express in the form $1:n$

a) $0.5:2.5$
 $1:5$

b) $0.25:1.75$
 $1:7$

2) A height h is 5.4cm, rounded to the nearest mm. Complete the error interval:

$$5.35\text{cm} \leq h < 5.45\text{cm}$$

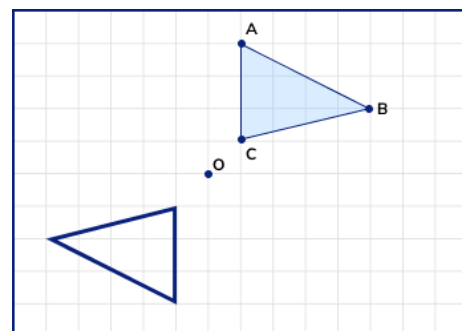
3) Generate the first five terms of a sequence given that the third term is 16 and the term to term rule is “multiply by 2”.

4, 8, 16, 32, 64

4) Temperature is an example of which type of data?

Continuous data

5) Rotate the triangle 180° clockwise about point O .



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