

Week 5

This week in a nutshell:

Q1 may require a brief review before some students feel confident to answer questions. Consider showing students Fibonacci Sequence when discussing Q2 and asking them to come up with some of their own rules and sequences for their peers to guess. Students may need a reminder of methods for calculating in Q3. Show them how to use the fraction button on a scientific calculator to check their own answers. Consider a formulae and pi memory competition to inject some fun into Q4. Q5 may require printing or copying onto squared paper for students who struggle with reading from the board.

Question 1: Measures of average and the range

Question 2: Term to term rules

Question 3: Fraction arithmetic

Question 4: Area of a circle

Question 5: Describing translations using vectors

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: Measures of average and the range

- Can you think of any mnemonics to remember which measure of average is which?
- What type of measure is the range and what can it tell us about a data set?

Question 2: Term to term rules

- What is the difference between an arithmetic sequence and a geometric sequence?
- How can a term to term rule involving division be written as a multiplication instead?

Question 3: Fraction arithmetic

- "Dividing by three is the same as multiplying by a third". Discuss this statement. How does it relate to any rules you use when dividing by a fraction?

Question 4: Area of a circle

- How might you calculate the area of a semicircle? What about the area of a sector?

Question 5: Describing translations using vectors

- In the daily questions you are asked to write the vector that translates the blue triangle to the red triangle. What do you notice if you write the vector that translates the red triangle to the blue triangle instead?

Week 5: Day 1

- 1) Find the range for this data set:

3.0, 1.4, 6.4, 2.9, 6.4

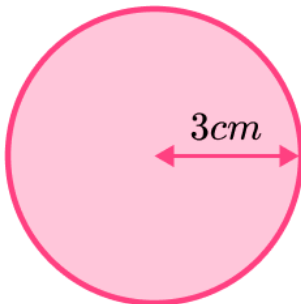
- 2) Find the term to term rule:

5, 8, 11, 14, 17, ...

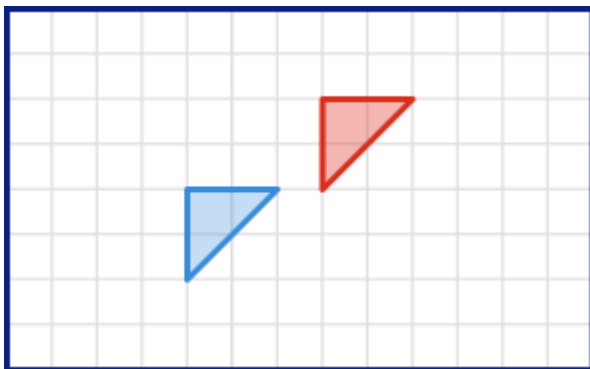
- 3) Calculate:

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

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



Week 5: Day 1 Answers

- 1) Find the range for this data set:

3.0, 1.4, 6.4, 2.9, 6.4 5

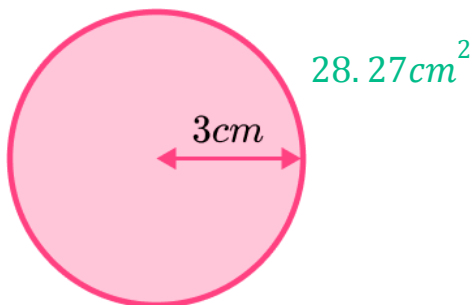
- 2) Find the term to term rule:

5, 8, 11, 14, 17, ... Add 3

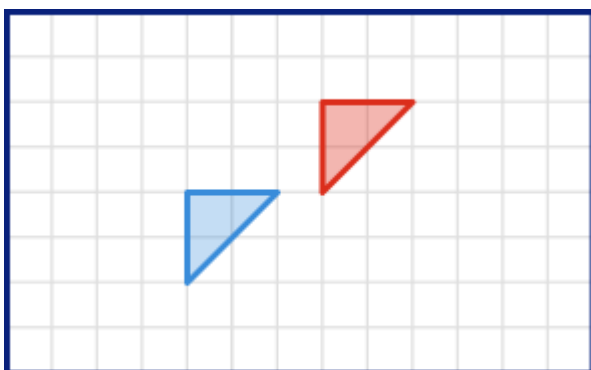
- 3) Calculate:

$$\frac{2}{5} + \frac{1}{2} = \frac{9}{10}$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



$$\begin{pmatrix} 3 \\ 2 \end{pmatrix}$$

Week 5: Day 2

- 1) Find the mean for this data set:

32, 38, 25, 23, 27

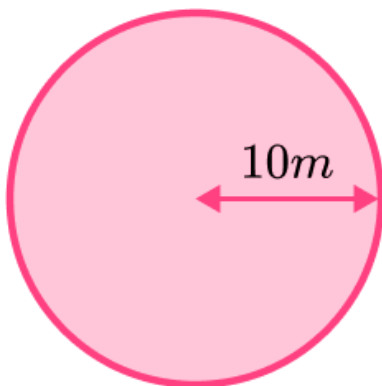
- 2) Find the term to term rule:

3, 6, 12, 24, 48...

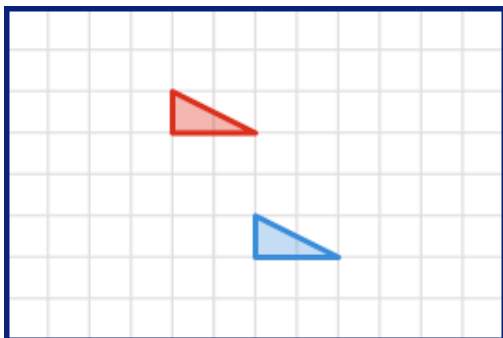
- 3) Calculate:

$$\frac{7}{8} - \frac{3}{5} =$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



Week 5: Day 2 Answers

- 1) Find the mean for this data set:

32, 38, 25, 23, 27 29

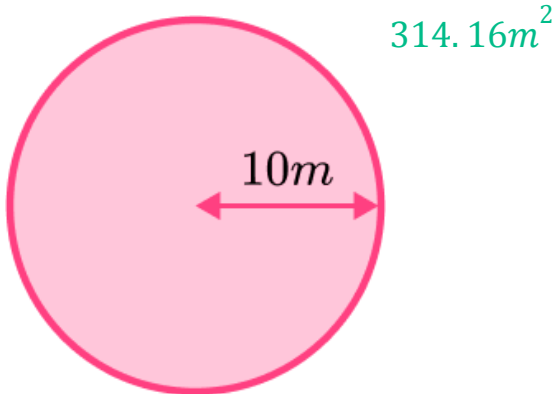
- 2) Find the term to term rule:

3, 6, 12, 24, 48... Multiply by 2

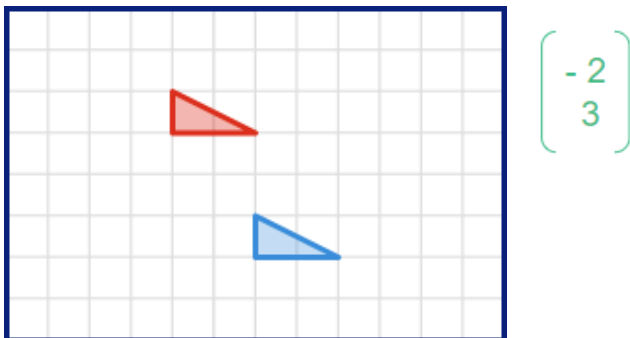
- 3) Calculate:

$$\frac{7}{8} - \frac{3}{5} = \frac{11}{40}$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



Week 5: Day 3

- 1) Find the median for this data set:

6, 9, 3, 5, 4, 7

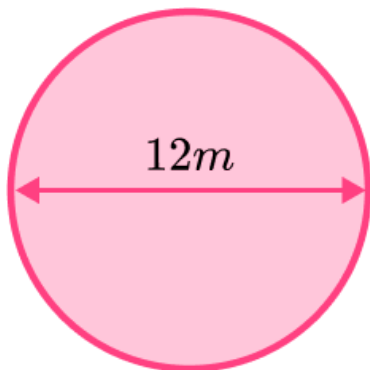
- 2) Find the term to term rule:

9, 4, -1, -6, ...

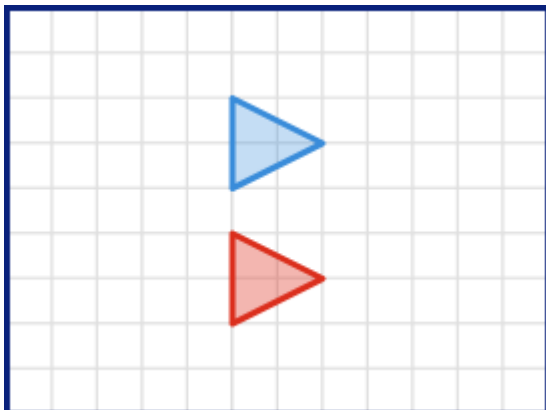
- 3) Calculate::

$$\frac{9}{10} \times \frac{2}{3} =$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



Week 5: Day 3 Answers

- 1) Find the median for this data set:

6, 9, 3, 5, 4, 7 5.5

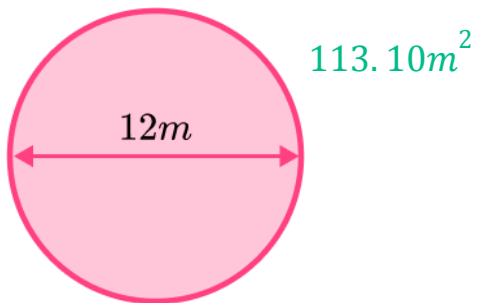
- 2) Find the term to term rule:

9, 4, -1, -6, ... Subtract 5

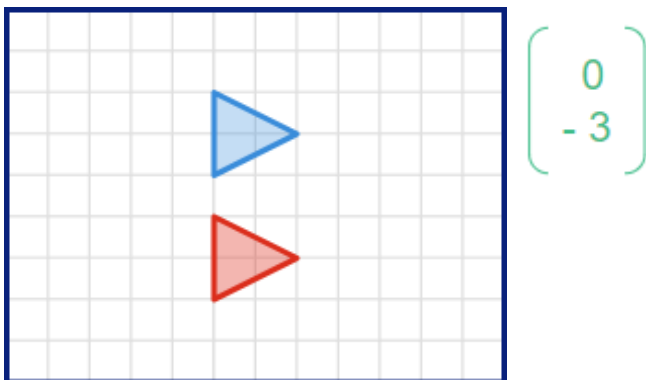
- 3) Calculate::

$$\frac{9}{10} \times \frac{2}{3} = \frac{3}{5}$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



Week 5: Day 4

- 1) Find the mode for this data set:

42, 45, 44, 45, 41, 49

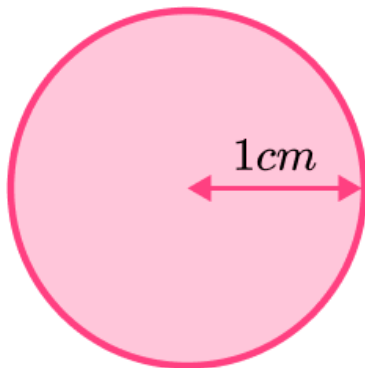
- 2) Find the term to term rule:

$\frac{1}{2}$, 1, 1.5, 2, $2\frac{1}{2}$...

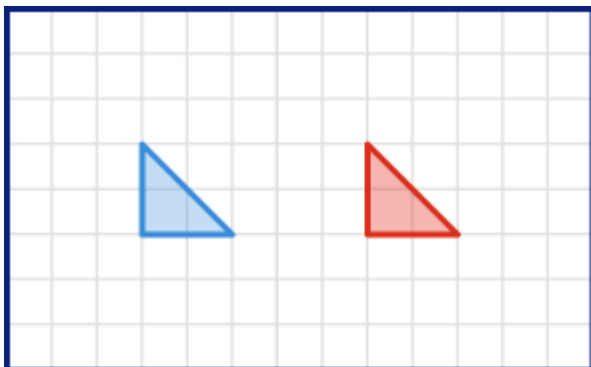
- 3) Calculate::

$$\frac{5}{6} \div \frac{1}{3} =$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



Week 5: Day 4 Answers

- 1) Find the mode for this data set:

42, 45, 44, 45, 41, 49

45

- 2) Find the term to term rule:

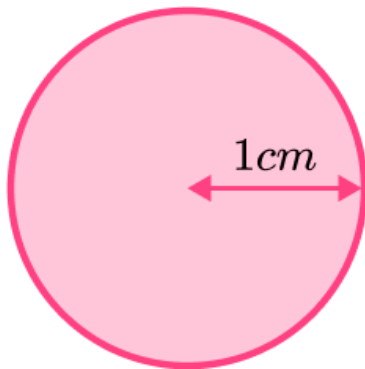
$\frac{1}{2}$, 1, 1.5, 2, $2\frac{1}{2}$...

Add $\frac{1}{2}$

- 3) Calculate::

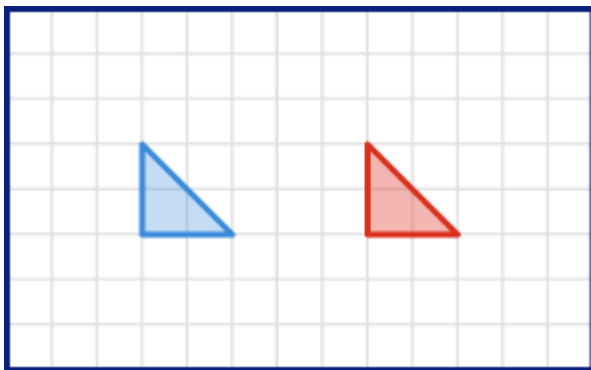
$$\frac{5}{6} \div \frac{1}{3} = \frac{5}{2} \text{ or } 2\frac{1}{2}$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



3.14cm^2

- 5) Write the column vector that translates the blue triangle to the red triangle.



$\begin{pmatrix} 5 \\ 0 \end{pmatrix}$

Week 5: Day 5

- 1) Find the median for this data set:

3.4, 8.6, 3.5, 8.7, 3.3

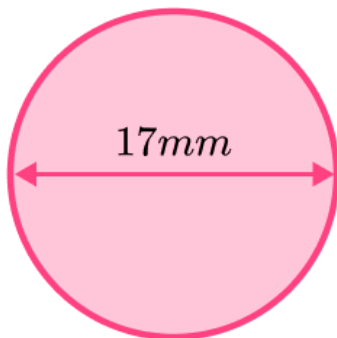
- 2) Find the term to term rule:

243, 81, 27, 9, 3, ...

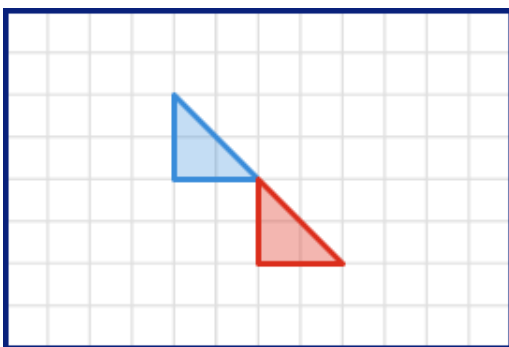
- 3) Calculate:

$$\frac{1}{2} \times \frac{3}{8} \times \frac{3}{4} =$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



Week 5: Day 5 Answers

- 1) Find the median for this data set:

3.4, 8.6, 3.5, 8.7, 3.3 3.5

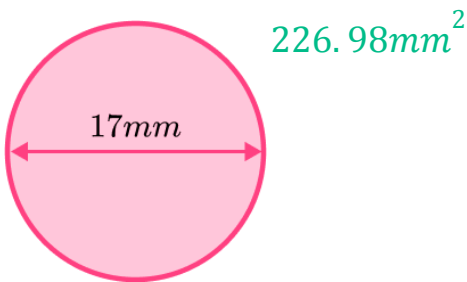
- 2) Find the term to term rule:

243, 81, 27, 9, 3, ... Divide by 3

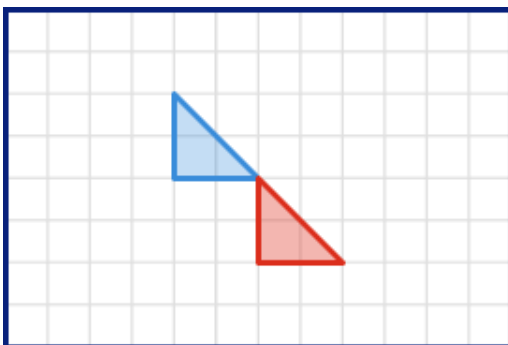
- 3) Calculate:

$$\frac{1}{2} \times \frac{3}{8} \times \frac{3}{4} = \frac{9}{64}$$

- 4) What is the area of the circle below? Give your answer to 2 decimal places.



- 5) Write the column vector that translates the blue triangle to the red triangle.



$$\begin{pmatrix} 2 \\ -2 \end{pmatrix}$$

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