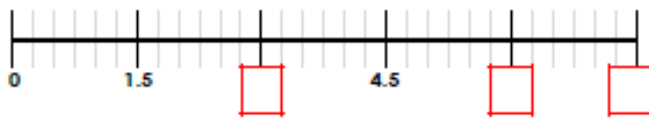


**Bronze**

1a. Use the number line to find the missing numbers in the sequence.



VF

2a. Look at the sequences below.

|     |     |     |   |     |
|-----|-----|-----|---|-----|
| 0.4 | 0.6 | 0.8 | 1 | 1.2 |
|-----|-----|-----|---|-----|

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 0.2 | 0.7 | 1.2 | 1.7 | 2.2 |
|-----|-----|-----|-----|-----|

|      |      |      |      |      |
|------|------|------|------|------|
| 0.25 | 0.38 | 0.51 | 0.64 | 0.77 |
|------|------|------|------|------|

Write a rule for each and find the next 3 terms in the sequences.



VF

3a.

The first term is 2.3  
The rule is + 0.09

Find the 3<sup>rd</sup>, 5<sup>th</sup> and 7<sup>th</sup> term of the sequence.



VF

4a.

The 1<sup>st</sup> term is 0.95  
The 3<sup>rd</sup> term is 0.75  
The 5<sup>th</sup> term is 0.55

Find the rule of this sequence.

1b. The children have been learning about decimal sequences.

|      |   |      |     |      |
|------|---|------|-----|------|
| 3.55 | 3 | 2.45 | 1.9 | 1.35 |
|------|---|------|-----|------|



Lily

The rule is + 0.55



Adelina

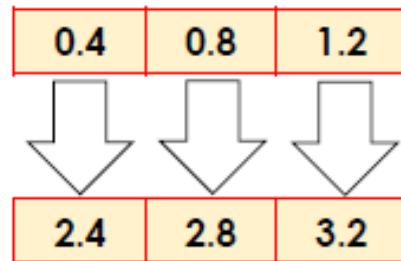
The rule is subtract a half.

Who is correct? Explain your answer.



RF

2b. Compare the two sequences below.



Calculate the difference between the same terms in the two sequences.

Find and describe any patterns.



R

3b. Prices have increased by £0.16 per year. Complete the table below to plot the price changes.

| 2016  | 2017 | 2018 |
|-------|------|------|
| £1.94 |      |      |
| £3.65 |      |      |

How much will the price be in 2020?

## Silver

5a. Use the number line to find the missing numbers in the sequence.



VF

6a. Look at the sequences below.

|      |       |       |       |       |
|------|-------|-------|-------|-------|
| 2.53 | 2.553 | 2.576 | 2.599 | 2.622 |
|------|-------|-------|-------|-------|

|      |      |      |     |      |
|------|------|------|-----|------|
| 0.99 | 0.96 | 0.93 | 0.9 | 0.87 |
|------|------|------|-----|------|

|       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 0.892 | 0.885 | 0.878 | 0.871 | 0.864 |
|-------|-------|-------|-------|-------|

Write a rule for each and find the next 3 terms in the sequences.



VF

7a.

The first term is 0.23  
The rule is + 0.46

Find the 2<sup>nd</sup>, 4<sup>th</sup> and 7<sup>th</sup> term of the sequence.



VF

8a.

The 3<sup>rd</sup> term is 7.603.  
The 6<sup>th</sup> term is 7.693.  
The 9<sup>th</sup> term is 7.783.

Find the rule of this sequence.

4b. The children have been learning about decimal sequences.

|      |      |   |      |      |
|------|------|---|------|------|
| 7.98 | 6.99 | 6 | 5.01 | 4.02 |
|------|------|---|------|------|



Jon

Our next term will be a smaller number than we have now.

If 7.98 is the 1st term then the 7<sup>th</sup> will be 2.04



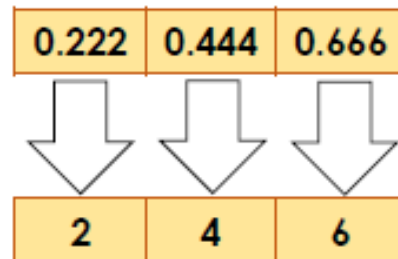
Rhianna

Who is correct? Explain your answer.



R

5b. Compare the two sequences below.



Calculate the difference between the same terms in the two sequences.

Find and describe any patterns.



R

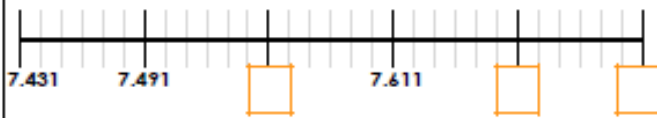
6b. Property sales have decreased by £0.232m per year. Complete the table below to plot the price changes.

| 2016   | 2017 | 2018 |
|--------|------|------|
| £4.95m |      |      |
| £9.03m |      |      |

How much will the price be in 2022?

**Gold**

9a. Use the number line to find the missing numbers in the sequence.



VF

10a. Look at the sequences below.

|       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 0.085 | 0.078 | 0.071 | 0.064 | 0.057 |
|-------|-------|-------|-------|-------|

|        |      |        |        |        |
|--------|------|--------|--------|--------|
| 12.432 | 12.4 | 12.368 | 12.336 | 12.304 |
|--------|------|--------|--------|--------|

|       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 0.543 | 0.643 | 0.843 | 1.143 | 1.543 |
|-------|-------|-------|-------|-------|

Write a rule for each and find the next 3 terms in the sequences.



VF

11a.

The first term is 12.965  
The rule is  $- 2.9$

Find the 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> term of the sequence.



VF

12a.

The 6<sup>th</sup> term is 0.543  
The 9<sup>th</sup> term is 0.567  
The 12<sup>th</sup> term is 0.591

Find the rule of this sequence.

7b. The children have been learning about decimal sequences.

|       |      |       |   |       |
|-------|------|-------|---|-------|
| 5.035 | 5.69 | 6.345 | 7 | 7.655 |
|-------|------|-------|---|-------|



Venkat

If 7 is a term in the sequence then all multiples of 7 will also be terms.

Our sequence will never have more than 3 decimal places.



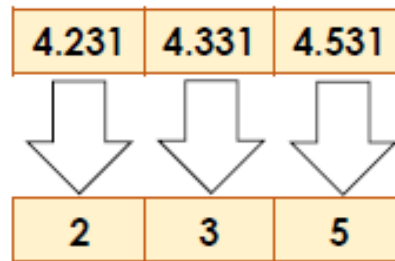
Lou

Who is correct? Explain your answer.



R

8b. Compare the two sequences below.



- Calculate the difference between the same terms in the two sequences.
- Find and describe any patterns.
- Calculate the next term in each sequence to check your pattern works.



R

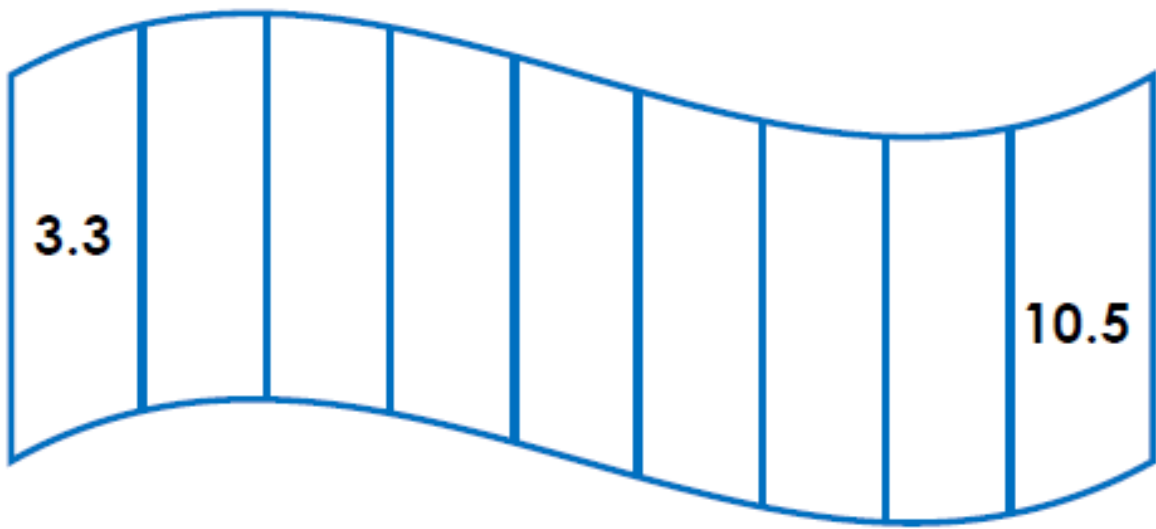
9b. Ice cream sales grew by an increasing difference of £0.011m per year. Complete the table below to plot the sales changes.

| 2016    | 2017    | 2018 | 2019 |
|---------|---------|------|------|
| £6.933m | £6.944m |      |      |
| £7.772m | £7.783m |      |      |

What will sales be in 2025?

**Challenge**

1. The numbers below are part of a 9 term sequence. Find the rule and include the numbers to complete the sequence.



**5.3**

**3.9**

**7.5**

**3.5**

2. Explore different rules that could fit with the given term below. The difference between the terms must decrease each time.

