

## Week 11

### This week in a nutshell:

The topics looked at over this week should be familiar so this is about building fluency and confidence. There is room for extension by asking students to justify their steps in question 3. If necessary, students may consult previous notes in order to look up definitions for question 5.

**Question 1:** Rounding

**Question 2:** Using  $n^{\text{th}}$  term rules

**Question 3:** Linear equations (two steps)

**Question 4:** Column addition/subtraction

**Question 5:** Understanding graphs of linear equations

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**

- How have you developed your rounding strategies so far this term?

Question 2: **Using  $n^{\text{th}}$  term rules**

- What are the advantages/disadvantages of using  $n^{\text{th}}$  term rules?

Question 3: **Linear equations (two steps)**

- How could you justify your steps as part of your solution?

Question 4: **Column addition/subtraction**

- Why is it important to line up the numbers when using the column method?

Question 5: **Understanding graphs of linear equations**

- How can you describe a line in terms of algebra?

## Week 11: Day 1

1) Round to the nearest integer:

- a) 4.8
  - b) 9.41
- 

2) If the  $n^{\text{th}}$  term is  $2n + 7$ ,

- a) The 1<sup>st</sup> term is...
  - b) The 5<sup>th</sup> term is...
- 

3) Solve for  $x$

$$3x + 2 = 2x + 9$$

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4) Complete the calculation:

$$\begin{array}{r} 2 \quad 8 \quad 4 \\ + \quad 1 \quad 3 \quad 7 \\ \hline \\ \hline \end{array}$$

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5) A straight line has equation

$$y = 4x + 5$$

What is the gradient of this line?

## Week 11: Day 1 Answers

1) Round to the nearest integer:

a) 4.8      5

b) 9.41      9

2) If the  $n^{\text{th}}$  term is  $2n + 7$ ,

a) The 1<sup>st</sup> term is... 9

b) The 5<sup>th</sup> term is... 17

3) Solve for  $x$

$$3x + 2 = 2x + 9 \qquad x = 7$$

4) Complete the calculation:

$$\begin{array}{r} 2 \quad 8 \quad 4 \\ + \quad 1 \quad 3 \quad 7 \\ \hline 4 \quad 2 \quad 1 \end{array}$$

5) A straight line has equation

$$y = 4x + 5$$

What is the gradient of this line? 4

## Week 11: Day 2

1) **Round to the nearest 100:**

- a) 3258
- b) 55317

2) If the  $n^{\text{th}}$  term is  $3n + 1$ ,

- a) The  $5^{\text{th}}$  term is...
- b) The  $100^{\text{th}}$  term is...

3) **Solve for  $x$**

$$x + 2.8 = 2x + 1.7$$

4) **Complete the calculation:**

$$\begin{array}{r} 5 \quad 3 \quad 2 \\ - \quad 4 \quad 2 \quad 3 \\ \hline \\ \hline \end{array}$$

5) **A straight line has equation**

$$y = 2x - 3$$

Write down the coordinates of the point where this line crosses the  $y$ -axis.

## Week 11: Day 2 Answers

1) Round to the nearest 100:

- a) 3258      3300  
b) 55317      55300

2) If the  $n^{\text{th}}$  term is  $3n + 1$ ,

- a) The 5<sup>th</sup> term is... 16  
b) The 100<sup>th</sup> term is... 301

3) Solve for  $x$

$$x + 2.8 = 2x + 1.7 \qquad x = 1.1$$

4) Complete the calculation:

$$\begin{array}{r} 5 \quad 3 \quad 2 \\ - \quad 4 \quad 2 \quad 3 \\ \hline 1 \quad 0 \quad 9 \\ \hline \end{array}$$

5) A straight line has equation

$$y = 2x - 3$$

Write down the coordinates of the point where this line crosses the y-axis.

(0, -3)

## Week 11: Day 3

1) Round to the nearest 10:

- a) 345
- b) 7293

2) If the  $n^{\text{th}}$  term is  $1 - 5n$ ,

- a) The 1<sup>st</sup> term is...
- b) The 20<sup>th</sup> term is...

3) Solve for  $x$

$$7x = 4x + 9$$

4) Complete the calculation

$$\begin{array}{rcccc} & 4 & 6 & 6 & 5 \\ + & 6 & 4 & 4 & 5 \\ \hline & & & & \end{array}$$

5) A straight line has equation

$$y = 6 - 2x$$

What is the gradient of this line?

## Week 11: Day 3 Answers

1) Round to the nearest 10:

a) 345      350

b) 7293      7290

2) If the  $n^{\text{th}}$  term is  $1 - 5n$ ,

a) The 1<sup>st</sup> term is... -4

b) The 20<sup>th</sup> term is... -99

3) Solve for  $x$

$$7x = 4x + 9 \quad x = 3$$

4) Complete the calculation

|   |   |   |   |   |
|---|---|---|---|---|
|   | 4 | 6 | 6 | 5 |
| + | 6 | 4 | 4 | 5 |
|   |   |   |   |   |
|   | 1 | 1 | 1 | 0 |
|   |   |   |   |   |

5) A straight line has equation

$$y = 6 - 2x$$

What is the gradient of this line? -2

## Week 11: Day 4

1) Round to the 1 significant figure:

- a) 8467
- b) 1.677

2) If the  $n^{\text{th}}$  term is  $3n - 2$ ,

- a) The 1<sup>st</sup> term is...
- b) The 10<sup>th</sup> term is...

3) Solve for  $x$

$$6x + 9 = 3x + 9$$

4) Complete the calculation:

$$\begin{array}{r} 4 \quad 0 \quad 0 \quad 3 \\ - \quad 1 \quad 2 \quad 7 \quad 8 \\ \hline \\ \hline \end{array}$$

5) A straight line has equation

$$y = x + 3$$

Write down the coordinates of the point where this line crosses the x-axis.



## Week 11: Day 4 Answers

1) Round to the 1 significant figure:

a) 8467      8000

b) 1.677      2

2) If the  $n^{\text{th}}$  term is  $3n - 2$ ,

a) The 1<sup>st</sup> term is... 1

b) The 10<sup>th</sup> term is... 28

3) Solve for  $x$

$$6x + 9 = 3x + 9 \quad x = 0$$

4) Complete the calculation:

$$\begin{array}{r} 4 \quad 0 \quad 0 \quad 3 \\ - \quad 1 \quad 2 \quad 7 \quad 8 \\ \hline 2 \quad 7 \quad 2 \quad 5 \end{array}$$

5) A straight line has equation

$$y = x + 3$$

Write down the coordinates of the point where this line crosses the x-axis.

$$(-3, 0)$$

## Week 11: Day 5

1) Round to 2 significant figures:

- a) 7.1833
- b) 64937

2) If the  $n^{\text{th}}$  term is  $11 - 3n$ ,

- a) The 1<sup>st</sup> term is...
- b) The 5<sup>th</sup> term is...

3) Solve for  $x$

$$3 - 5x = 11 - 4x$$

4) Complete the calculation:

$$\begin{array}{r} 3 \quad 6 \quad 2 \\ 1 \quad 0 \quad 7 \\ + \quad 9 \quad 6 \\ \hline \\ \hline \end{array}$$

5) A straight line has equation

$$y + x = 4$$

Write down the coordinates of the point where this line crosses the  $y$ -axis.

## Week 11: Day 5 Answers

1) Round to 2 significant figures:

a) 7.1833      7.2

b) 64937      65000

2) If the  $n^{\text{th}}$  term is  $11 - 3n$ ,

a) The 1<sup>st</sup> term is... 8

b) The 5<sup>th</sup> term is... -4

3) Solve for  $x$

$$3 - 5x = 11 - 4x \qquad x = -8$$

4) Complete the calculation:

$$\begin{array}{r}
 3 \quad 6 \quad 2 \\
 1 \quad 0 \quad 7 \\
 + \quad 9 \quad 6 \\
 \hline
 5 \quad 6 \quad 5 \\
 \hline
 \end{array}$$

5) A straight line has equation

$$y + x = 4$$

Write down the coordinates of the point where this line crosses the y-axis.

(0, 4)

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