

Week 9

This week in a nutshell:

Again, this week has familiar topics but with an increased focus on algebraic thinking. Fluency and conceptual understanding should be emphasised over speed of answer, so if students need extra time this should be allowed where possible.

Question 1: Written multiplication/division

Question 2: Simplifying ratio

Question 3: Linear equations (one step)

Question 4: Table of values (linear rules)

Question 5: Order of operations

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: **Written multiplication/division**

- Can you explain how you would solve " 13×12 " using a written method?

Question 2: **Simplifying ratio**

- How do we apply highest common factors when simplifying ratio?

Question 3: **Linear equations (one step)**

- Is there a way to tell how many steps an equation can be solved in?

Question 4: **Tables of values (linear rules)**

- How do tables of values help us plot graphs accurately?

Question 5: **Order of operations**

- Why is it important to have an order of operations?

Week 9: Day 1

- 1) Use a written method to work out:

$$34 \times 26$$

- 2) Simplify the ratio:

$$12 : 8$$

- 3 Solve for x

$$x + 7 = 21$$

- 4) Complete the table of values using the rule

$$y = 3x - 5$$

x	-2	0	2
y			

- 5) By considering the order of operations, calculate the following:

a) $3 + 4 \times 2 =$

b) $(2 + 3) \times (7 - 2) =$

Week 9: Day 1 Answers

- 1) Use a written method to work out:

$$34 \times 26 = 884$$

- 2) Simplify the ratio:

$$12 : 8 \quad 3 : 2$$

- 3 Solve for x

$$x + 7 = 21 \quad x = 14$$

- 4) Complete the table of values using the rule

$$y = 3x - 5$$

x	-2	0	2
y	-11	-5	1

- 5) By considering the order of operations, calculate the following:

$$\begin{aligned} \text{a) } 3 + 4 \times 2 &= 3 + 8 \\ &= 11 \end{aligned}$$

$$\begin{aligned} \text{b) } (2 + 3) \times (7 - 2) &= 5 \times 5 \\ &= 25 \end{aligned}$$

Week 9: Day 2

- 1) Use a written method to work out:

$$1227 \div 3$$

- 2) Simplify the ratio:

$$24 : 16$$

- 3) Solve for x

$$x - 8 = 15$$

- 4) Complete the table of values using the rule

$$y = 2x + 3$$

x	-1	0	3
y			

- 5) By considering the order of operations, calculate the following:

a) $6 \times 7 + 3 \times 5 =$

b) $60 - 2 \times 4^2 =$

Week 9: Day 2 Answers

- 1) Use a written method to work out:

$$1227 \div 3 = 409$$

- 2) Simplify the ratio:

$$24 : 16 \quad 3 : 2$$

- 3) Solve for x

$$x - 8 = 15 \quad x = 23$$

- 4) Complete the table of values using the rule
 $y = 2x + 3$

x	-1	0	3
y	1	3	9

- 5) By considering the order of operations, calculate the following:

a) $6 \times 7 + 3 \times 5 = 42 + 15$
 $= 57$

b) $60 - 2 \times 4^2 = 60 - 2 \times 16$
 $= 60 - 32$
 $= 28$

Week 9: Day 3

- 1) Use a written method to work out:

$$94 \times 63$$

- 2) Simplify the ratio:

$$15 : 21$$

- 3) Solve for x

$$3x = 27$$

- 4) Complete the table of values using the rule

$$y = 5(x - 1)$$

x	-2	1	6
y			

- 5) By considering the order of operations, calculate the following:

a) $5 + 8 \times 3 + 7 =$

b) $(4 + 3)^2 \div (2 + 5) =$

Week 9: Day 3 Answers

- 1) Use a written method to work out:

$$94 \times 63 = 5922$$

- 2) Simplify the ratio:

$$15 : 21 \quad 5 : 7$$

- 3) Solve for x

$$3x = 27 \quad x = 9$$

- 4) Complete the table of values using the rule

$$y = 5(x - 1)$$

x	-2	1	5
y	-15	0	20

- 5) By considering the order of operations, calculate the following:

$$\begin{aligned} \text{a) } 5 + 8 \times 3 + 7 &= 5 + 24 + 7 \\ &= 36 \end{aligned}$$

$$\begin{aligned} \text{b) } (4 + 3)^2 \div (2 + 5) &= 7^2 \div 7 \\ &= 49 \div 7 \\ &= 7 \end{aligned}$$

Week 9: Day 4

- 1) Use a written method to work out:

$$525 \div 25$$

- 2) Simplify the ratio:

$$15 : 25 : 10$$

- 3) Solve for x

$$x + 2.5 = 12$$

- 4) Complete the table of values using the rule

$$x + y = 9$$

x	0	2	5
y			

- 5) By considering the order of operations, calculate the following:

a) $2 \times (3 - 5)^2 =$

b) $(17 - 9) \div 2^3 - 1 =$

Week 9: Day 4 Answers

- 1) Use a written method to work out:

$$525 \div 25 = 21$$

- 2) Simplify the ratio:

$$15 : 25 : 10 \quad 3 : 5 : 2$$

- 3) Solve for x

$$x + 2.5 = 12 \quad x = 9.5$$

- 4) Complete the table of values using the rule

$$x + y = 9$$

x	0	2	5
y	9	7	4

- 5) By considering the order of operations, calculate the following:

$$\begin{aligned} \text{a) } 2 \times (3 - 5)^2 &= 2 \times (-2)^2 \\ &= 2 \times 4 \\ &= 8 \end{aligned}$$

$$\begin{aligned} \text{b) } (17 - 9) \div 2^3 - 1 &= 8 \div 8 - 1 \\ &= 1 - 1 \\ &= 0 \end{aligned}$$

Week 9: Day 5

- 1) Use a written method to work out:

$$73 \times 490$$

- 2) Simplify the ratio:

$$8 : 28 : 12$$

- 3) Solve for x

$$\frac{25}{x} = 5$$

- 4) Complete the table of values using the rule

$$y = 7 - 2x$$

x	-2	0	2
y			

- 5) By considering the order of operations, calculate the following:

a) $1 + 4^2 \times \sqrt{25} =$

b) $(3^2 - 2) \times (18 \div 6) =$

Week 9: Day 5 Answers

- 1) Use a written method to work out:

$$73 \times 490 = 35770$$

- 2) Simplify the ratio:

$$8 : 28 : 12 \quad 2 : 7 : 3$$

- 3) Solve for x

$$\frac{25}{x} = 5 \quad x = 5$$

- 4) Complete the table of values using the rule

$$y = 7 - 2x$$

x	-2	0	2
y	11	7	3

- 5) By considering the order of operations, calculate the following:

$$\begin{aligned} \text{a) } 1 + 4^2 \times \sqrt{25} &= 1 + 16 \times 5 \\ &= 1 + 80 \\ &= 81 \end{aligned}$$

$$\begin{aligned} \text{b) } (3^2 - 2) \times (18 \div 6) &= (9 - 2) \times 3 \\ &= 7 \times 3 \\ &= 21 \end{aligned}$$

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