

Week 1

This week in a nutshell:

This week acts as a confidence booster with material that is a familiar part of your student's mathematical toolkit. Question 3 is a precursor to the work this half term using standard form. Dealing with any issues in relation to powers of ten now will make the development of the new ideas of standard form all the more attainable.

Question 1: Expanding brackets

Question 2: Finding a percentage of an amount

Question 3: Working with powers of ten

Question 4: Writing fractions

Question 5: Calculations involving money

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: Expanding brackets

- List some common mistakes made when expanding brackets.
- How can you check your answer when expanding brackets?

Question 2: Finding a percentage of an amount

- Is it easier to use a percentage, decimal or fraction? Why do you think this?

Question 3: Working with powers of ten

- Why is the number ten so prevalent in maths?

Question 4: Writing fractions

- How would you describe these shaded regions without a fraction?

Question 5: Calculations involving money

- Is currency the only real life situation to feature numbers with two decimal places?

Week 1: Day 1

1) **Expand:**

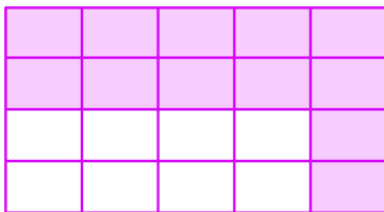
$$7(x - 4) =$$

2) **What is 20% of 95?**

3) **Evaluate:**

$$10^3 =$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.**



5) **How much did the customer pay for this purchase in a cafe?**



Week 1: Day 1 Answers

1) **Expand:**

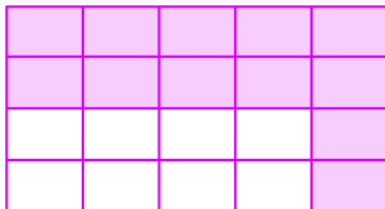
$$7(x - 4) = 7x - 28$$

2) What is 20% of 95? 19

3) **Evaluate:**

$$10^3 = 1000$$

4) What proportion is shaded? Write your answer as a fraction in its simplest form. $\frac{3}{5}$



5) How much did the customer pay for this purchase in a cafe? £10.30



Week 1: Day 2

1) **Expand:**

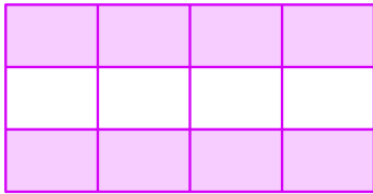
$$3(2 - 3x) =$$

2) **What is 15% of 76?**

3) **Evaluate:**

$$10^{-2} =$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.**



5) **A customer pays for this purchase with a £10 note. How much change do they receive?**



Week 1: Day 2 Answers

1) Expand:

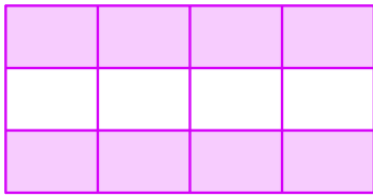
$$3(2 - 3x) = 6 - 9x$$

2) What is 15% of 76? 11.4

3) Evaluate:

$$10^{-2} = 0.01$$

4) What proportion is shaded? Write your answer as a fraction in its simplest form. $\frac{2}{3}$



5) A customer pays for this purchase with a £10 note. How much change do they receive? 90p or £0.90



Week 1: Day 3

1) **Expand:**

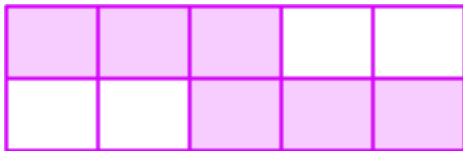
$$a(x + b) =$$

2) **What is 65% of 220?**

3) **Evaluate:**

$$10^2 + 10^4 =$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.**



5) **Two friends split this bill equally. How much do they each pay?**



Week 1: Day 3 Answers

1) **Expand:**

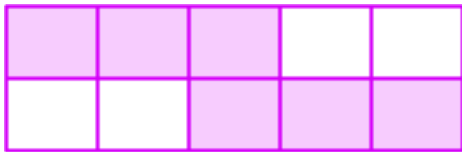
$$a(x + b) = ax + ab$$

2) **What is 65% of 220?** 143

3) **Evaluate:**

$$\begin{aligned} 10^2 + 10^4 &= 100 + 10000 \\ &= 10100 \end{aligned}$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.** $\frac{3}{5}$



5) **Two friends split this bill equally. How much do they each pay?** £6.10



Week 1: Day 4

1) **Expand:**

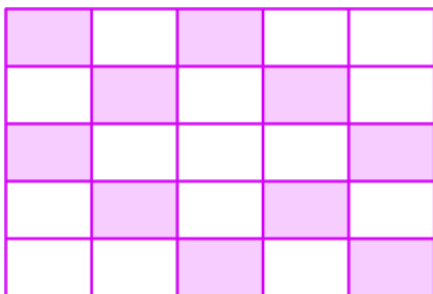
$$x(x - 5) =$$

2) **What is 81% of 450?**

3) **Evaluate:**

$$10^{-1} + 10^0 =$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.**



5) **This cafe bill was £9.40. How much did the cake cost?**



Week 1: Day 4 Answers

1) **Expand:**

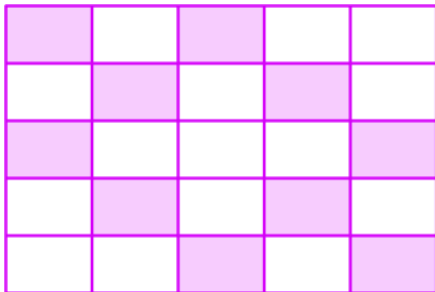
$$x(x - 5) = x^2 - 5x$$

2) **What is 81% of 450?** 364.5

3) **Evaluate:**

$$10^{-1} + 10^0 = 0.1 + 1 \\ = 1.1$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.** $\frac{2}{5}$



5) **This cafe bill was £9.40. How much did the cake cost?** £3.30



Week 1: Day 5

1) **Expand:**

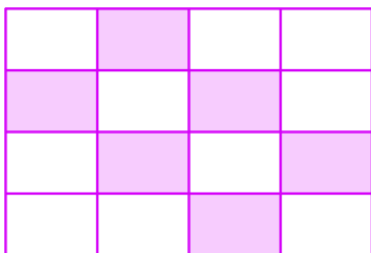
$$2x(5x + 3) =$$

2) **What is 32% of 160?**

3) **Evaluate:**

$$10^4 \times 10^2 =$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.**



5) **This bill was £9.60. How much was one flapjack?**



Week 1: Day 5 Answers

1) **Expand:**

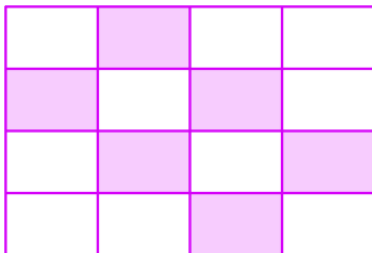
$$2x(5x + 3) = 10x^2 + 6x$$

2) **What is 32% of 160?** 51.2

3) **Evaluate:**

$$10^4 \times 10^2 = 10000 \times 100 \\ = 1000000$$

4) **What proportion is shaded? Write your answer as a fraction in its simplest form.** $\frac{3}{8}$



5) **This bill was £9.60. How much was one flapjack?** £2.45



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