

Week 1

This week in a nutshell:

As the Spring Term commences aim to give students a sense of success and confidence by recapping previously seen topics, allowing them to use their notes, and discussing ways they can check their answers independently before they are revealed. The topic of percentages is introduced here visually allowing a connection to be made with the concept of fractions.

Question 1: Written arithmetic with integers

Question 2: Product of prime factors

Question 3: Solving equations

Question 4: Visualising percentages

Question 5: Decimals and mixed numbers

This week's ideas for class discussion include:

Question 1: **Written arithmetic with integers**

- A year 8 student writes $283 + 462 = 6145$, $347 - 164 = 223$ and $539 - 243 = 396$. Pretend you are a teacher marking this work. Try to identify any errors and explain where the student went wrong.

Question 2: **Product of prime factors**

- "Express 24 as a product of its prime factors". Discuss all the key words in this instruction. Follow the instructions and then think of a way that you can check your answer.

Question 3: **Solving equations**

- The teacher writes $11 - 4x = 23$ on the board. Abi says $x = 3$, Bilal says $x = 8.5$ & Chrissy says $x = -3$. What is the fastest way to check who is correct? What mistakes have the other two students made?

Question 4: **Visualising percentages**

- If a shape is cut into 20 equal pieces, what percentage is each piece worth?
Now complete this rule by writing an expression on the dotted line:
"If a shape is cut into 'x' equal pieces then each piece is worth percent".

Question 5: **Decimals and mixed numbers**

- Although there are methods for converting between decimals & fractions there are some key conversions that are useful to commit to memory. Write a list of these and aim to memorise them.

Week 1: Day 1

1) Calculate

$$472 + 139 =$$

2) Write 84 as a product of prime factors.

3) Solve for x

$$3x + 1 = 25$$

4) What percentage is coloured blue?



5) Convert this mixed number into a decimal.

$$2\frac{7}{10} = \boxed{}$$

Week 1: Day 1 Answers

- 1) Calculate

$$472 + 139 = 611$$

- 2) Write 84 as a product of prime factors.

$$2 \times 2 \times 3 \times 7$$

- 3) Solve for x

$$3x + 1 = 25 \quad x = 8$$

- 4) What percentage is coloured blue?

50%



- 5) Convert this mixed number into a decimal.

$$2\frac{7}{10} = 2.7$$

Week 1: Day 2

1) Calculate

$$273 - 36 =$$

2) Write 99 as a product of prime factors.

3) Solve for x

$$4x - 7 = 9$$

4) What percentage is coloured orange?



5) Convert this decimal into a mixed number.

$$1.75 = \square \frac{\square}{\square}$$

Week 1: Day 2 Answers

1) Calculate

$$273 - 36 = 237$$

2) Write 99 as a product of prime factors.

$$3 \times 3 \times 11$$

3) Solve for x

$$4x - 7 = 9 \quad x = 4$$

4) What percentage is coloured orange?

60%



5) Convert this decimal into a mixed number.

$$1.75 = 1 \frac{3}{4}$$

Week 1: Day 3

1) Calculate

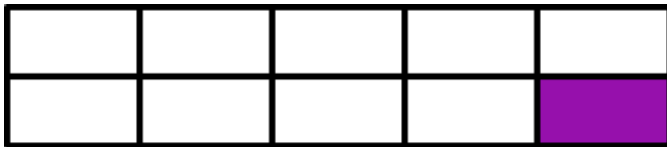
$$52 \times 37 =$$

2) Write 1000 as a product of prime factors.

3) Solve for x

$$7 + 6x = 25$$

4) What percentage is coloured purple?



5) Convert this mixed number into a decimal.

$$2 \frac{4}{5} = \boxed{}$$

Week 1: Day 3 Answers

1) Calculate

$$52 \times 37 = 1924$$

2) Write 1000 as a product of prime factors.

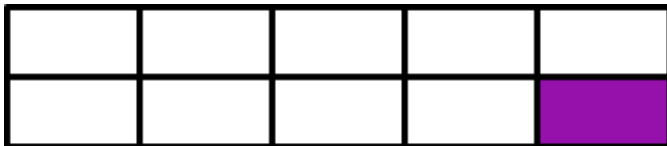
$$2 \times 2 \times 2 \times 5 \times 5 \times 5$$

3) Solve for x

$$7 + 6x = 25 \quad x = 3$$

4) What percentage is coloured purple?

10%



5) Convert this mixed number into a decimal.

$$2 \frac{4}{5} = 2.8$$

Week 1: Day 4

1) Calculate

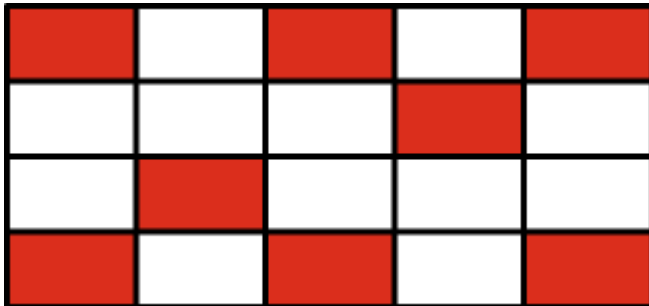
$$28 + 311 + 294 =$$

2) Write 48 as a product of prime factors.

3) Solve for x

$$\frac{x}{5} + 2 = 6$$

4) What percentage is coloured red?



5) Convert this decimal into a mixed number

$$5.5 = \boxed{} \frac{\boxed{}}{\boxed{}}$$

Week 1: Day 4 Answers

1) Calculate

$$28 + 311 + 294 = 633$$

2) Write 48 as a product of prime factors.

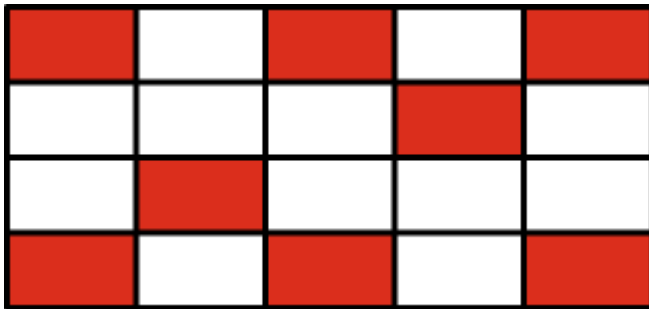
$$2 \times 2 \times 2 \times 2 \times 3$$

3) Solve for x

$$\frac{x}{5} + 2 = 6 \quad x = 20$$

4) What percentage is coloured red?

40%



5) Convert this decimal into a mixed number.

$$5.5 = 5 \frac{1}{2}$$

Week 1: Day 5

1) Calculate

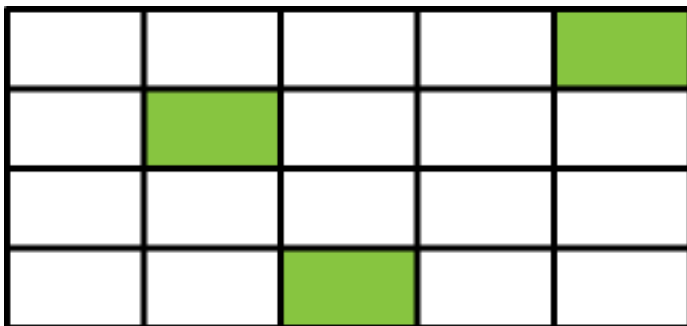
$$533 \div 13 =$$

2) Write 180 as a product of prime factors.

3) Solve for x

$$25 - 2x = 11$$

4) What percentage is coloured green?



5) Convert this decimal into a mixed number.

$$1.125 = \square \frac{\square}{\square}$$

Week 1: Day 5 Answers

- 1) Calculate

$$533 \div 13 = 41$$

- 2) Write 180 as a product of prime factors.

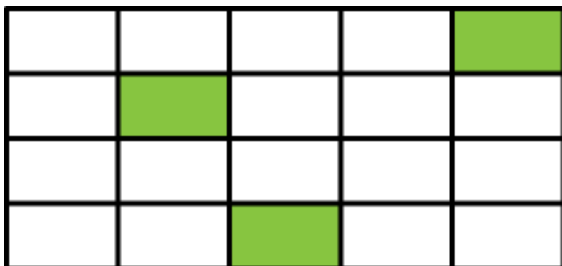
$$2 \times 2 \times 3 \times 3 \times 5$$

- 3) Solve for x

$$25 - 2x = 11 \quad x = 7$$

- 4) What percentage is coloured green?

15%



- 5) Convert this decimal into a mixed number.

$$1.125 = 1 \frac{1}{8}$$

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