

Week 6

This week in a nutshell:

Questions 1-3 should be familiar to students. Questions 4 and 5 may require a little extra time and thought; they can be attempted in more than one way (and it is worth talking about the different methods available). Using the diagrams effectively is a great skill to develop. Being fluent in these visual representations of ratio is highly beneficial.

Question 1: Expanding brackets

Question 2: Integer arithmetic (worded)

Question 3: Equivalent fractions

Question 4: Linear relationships and ratio

Question 5: Manipulating ratio

This week's ideas for class discussion include:

Question 1: **Expanding brackets**

- Can the expansion of a bracket have more than one possible answer?

Question 2: **Integer arithmetic (worded)**

- Why do you think whole numbers are called integers?

Question 3: **Equivalent fractions**

- How many fractions are equivalent to $\frac{1}{2}$?

Question 4: **Linear relationships and ratio**

- What feature of a graph does the ratio we have found relate to?

Question 5: **Manipulating ratio**

- Why might we need to manipulate a ratio?

Week 6: Day 1

- 1) Write the expanded form of

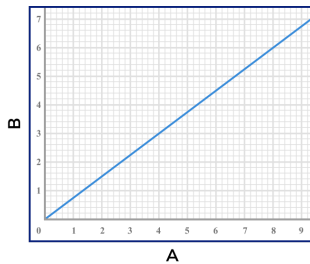
$$3(x + 7) =$$

- 2) Determine the product of 14 and 27.

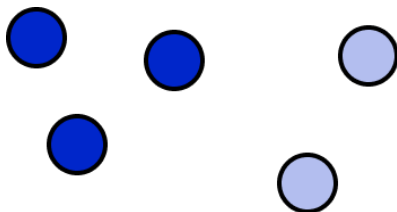
- 3) Make the fractions equivalent.

$$\frac{1}{2} = \frac{\boxed{}}{6} = \frac{5}{\boxed{}}$$

- 4) Write the ratio of B to A in its simplest form.



- 5) How many extra dark blue circles are needed so that the ratio of dark blue to light blue is 2:1?



Week 6: Day 1 Answers

- 1) Write the expanded form of

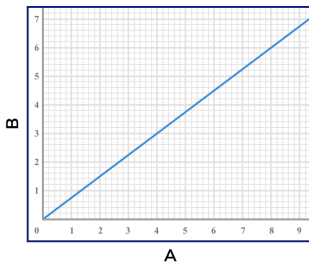
$$3(x + 7) = 3x + 21$$

- 2) Determine the product of 14 and 27. **378**

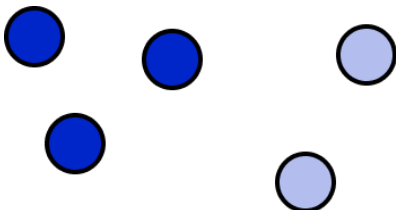
- 3) Make the fractions equivalent.

$$\frac{1}{2} = \frac{\boxed{3}}{6} = \frac{5}{\boxed{10}}$$

- 4) Write the ratio of B to A
in its simplest form. **3:4**



- 5) How many extra dark blue circles are needed so that the ratio of dark blue to light blue is 2:1? **1**



Week 6: Day 2

- 1) Write the expanded form of

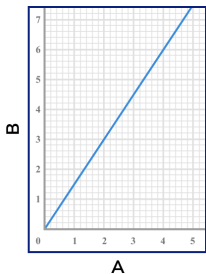
$$p(p + 5) =$$

- 2) Evaluate the sum of 189 and 134.
-

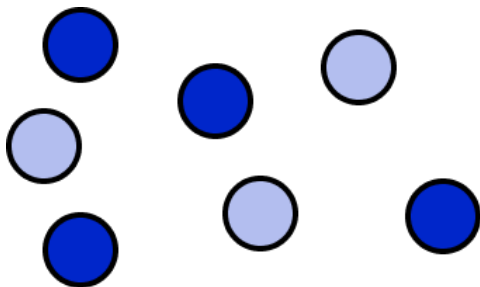
- 3) Make the fractions equivalent.

$$\frac{3}{5} = \frac{6}{\square} = \frac{\square}{20}$$

- 4) Write the ratio of B to A in its simplest form.



- 5) How many extra dark blue circles are needed so that the ratio of dark blue to light blue is 2:1?



Week 6: Day 2 Answers

- 1) Write the expanded form of

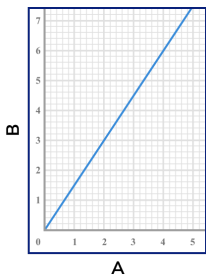
$$p(p + 5) = p^2 + 5p$$

- 2) Evaluate the sum of 189 and 134. 323

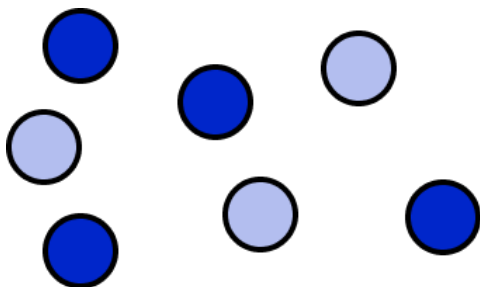
- 3) Make the fractions equivalent.

$$\frac{3}{5} = \frac{6}{10} = \frac{12}{20}$$

- 4) Write the ratio of B to A in its simplest form. 3:2



- 5) How many extra dark blue circles are needed so that the ratio of dark blue to light blue is 2:1? 2



Week 6: Day 3

- 1) Write the expanded form of

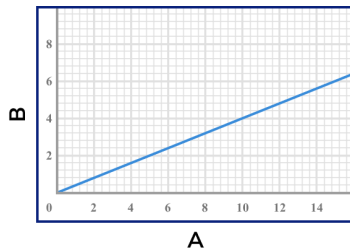
$$d(e - f) =$$

- 2) Work out the difference between 245 and 96.

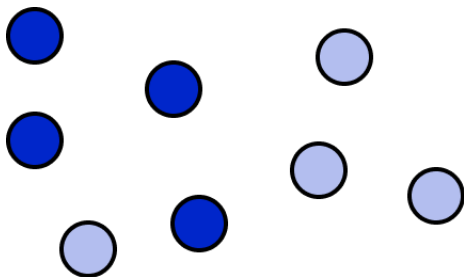
- 3) Make the fractions equivalent.

$$\frac{1}{\boxed{}} = \frac{3}{12} = \frac{9}{\boxed{}}$$

- 4) Write the ratio of B to A in its simplest form.



- 5) How many extra light blue circles are needed so that the ratio of dark blue to light blue is 2:3?



Week 6: Day 3 Answers

- 1) Write the expanded form of

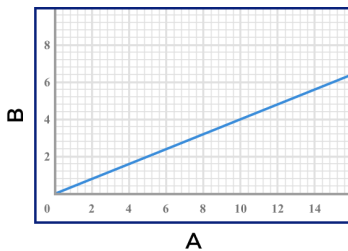
$$d(e - f) = de - df$$

- 2) Work out the difference between 245 and 96. 149

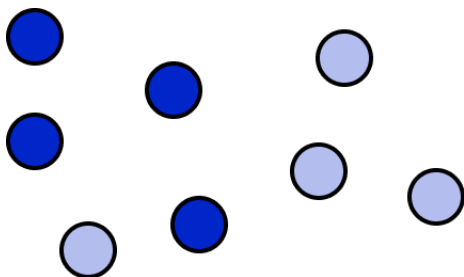
- 3) Make the fractions equivalent.

$$\frac{1}{\boxed{4}} = \frac{3}{12} = \frac{9}{\boxed{36}}$$

- 4) Write the ratio of B to A in its simplest form. 2:5



- 5) How many extra light blue circles are needed so that the ratio of dark blue to light blue is 2:3? 2



Week 6: Day 4

- 1) Write the expanded form of

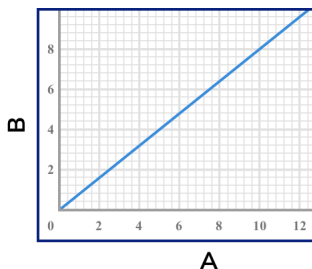
$$a(2 + 2a - b) =$$

- 2) Subtract 65 from 312.

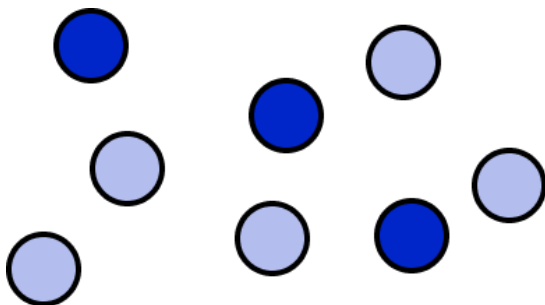
- 3) Make the fractions equivalent.

$$\frac{2}{\boxed{}} = \frac{5}{\boxed{}} = \frac{10}{100}$$

- 4) Write the ratio of B to A in its simplest form.



- 5) How many extra dark blue circles are needed so that the ratio of dark blue to light blue is 1:1?



Week 6: Day 4 Answers

- 1) Write the expanded form of

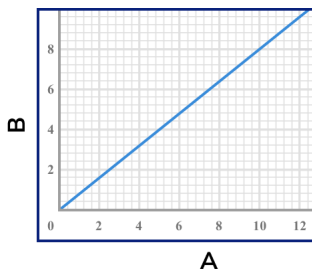
$$a(2 + 2a - b) = 2a + 2a^2 - ab$$

- 2) Subtract 65 from 312. 247

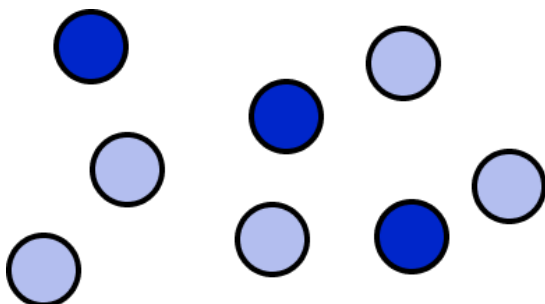
- 3) Make the fractions equivalent.

$$\frac{2}{\boxed{20}} = \frac{5}{\boxed{50}} = \frac{10}{100}$$

- 4) Write the ratio of B to A in its simplest form. 4:5



- 5) How many extra dark blue circles are needed so that the ratio of dark blue to light blue is 1:1? 2



Week 6: Day 5

- 1) Write the expanded form of

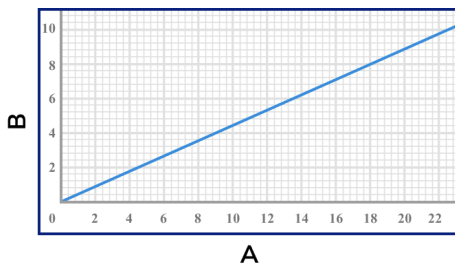
$$2m(3 - 2m) =$$

- 2) Find the total of 45, 72 and 119.

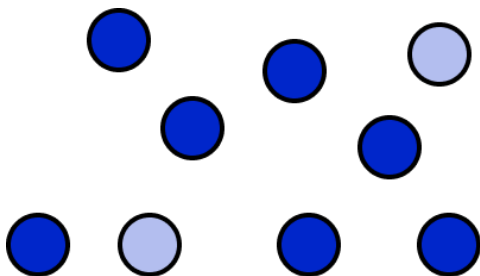
- 3) Make the fractions equivalent.

$$\frac{2}{9} = \frac{\boxed{}}{27} = \frac{8}{\boxed{}}$$

- 4) Write the ratio of B to A in its simplest form.



- 5) How many dark blue circles must be removed so that the ratio of dark blue to light blue is 2:1?



Week 6: Day 5 Answers

- 1) Write the expanded form of

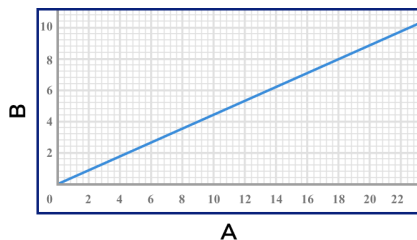
$$2m(3 - 2m) = 6m - 4m^2$$

- 2) Find the total of 45, 72 and 119. **236**

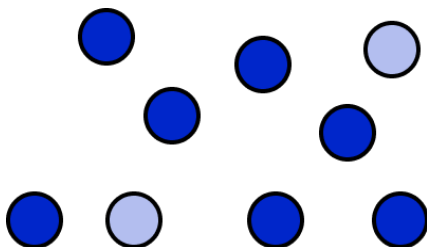
- 3) Make the fractions equivalent.

$$\frac{2}{9} = \frac{6}{27} = \frac{8}{36}$$

- 4) Write the ratio of B to A in its simplest form. **4:9**



- 5) How many dark blue circles must be removed so that the ratio of dark blue to light blue is 2:1? **3**



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