

Week 4

This week in a nutshell:

Q1 links back to week 2 where students converted decimals to percentages. Focus on non-calculator methods in Q2 and encourage students to write each step down. Students may need to see some examples before they feel confident to work on Q3 independently. Consider printing copies of Q4 if students do not have a close view of the board. Remind students to simplify their answers in Q5.

Question 1: Writing a percentage as a decimal

Question 2: Finding a percentage of an amount

Question 3: Expanding brackets

Question 4: Reading coordinates

Question 5: Writing ratio

This week's ideas for class discussion include:

Question 1: **Writing a percentage as a decimal**

- **Task:** Write down the rule for converting percentages into decimals. Now convert the following percentages into decimals: 7000%, 700%, 70%, 7%, 0.7%, 0.07%. Discuss your answers.

Question 2: **Finding a percentage of an amount**

- The teacher writes "To find 10% of an amount you divide by 10." Simon then writes "To find 5% of an amount you divide by 5." Does Simon's rule work? Use examples to justify your answer.

Question 3: **Expanding brackets**

- The teacher writes the expression $5a(2 + 3a)$ and tells students to expand the brackets. Here are the students' answers. Simon = $10a + 15a$. Harleen = $10a + 3a^2$. Evin = $10a + 15aa$. Trish = $52a + 53a^2$. Discuss each answer and what misconceptions the students might have.

Question 4: **Reading coordinates**

- **Task:** On a grid plot (3,5) and (5,3). What do you notice? Would you ever get these confused?
- Now plot (1,4), (-1,-4), (-1,4) and (1,-4). What do you notice?

Question 5: **Writing ratio**

- Simon says "the ratio 5:20 is the same as 1:4". Is Simon correct? Give reasons for your answer.

Week 4: Day 1

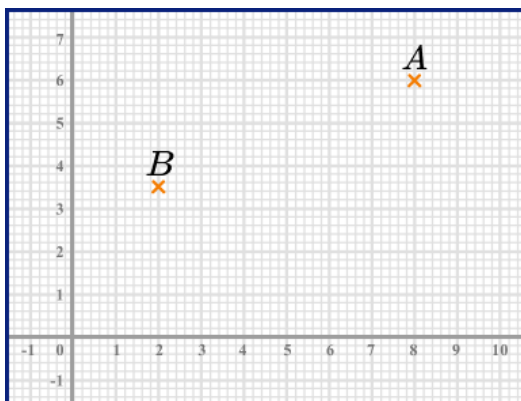
1) Write 15% as a decimal.

2) What is 10% of 90?

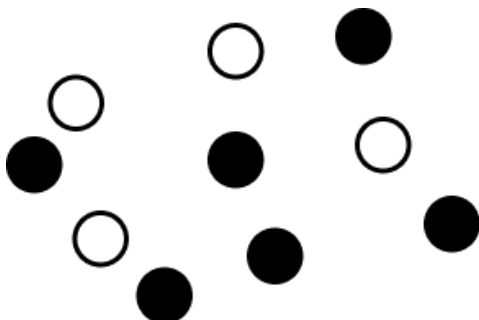
3) Expand:

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

4) Write down the coordinates of A and B.



5) Write the ratio of black to white in its simplest form.



Week 4: Day 1 Answers

- 1) Write 15% as a decimal.

0.15

- 2) What is 10% of 90?

9

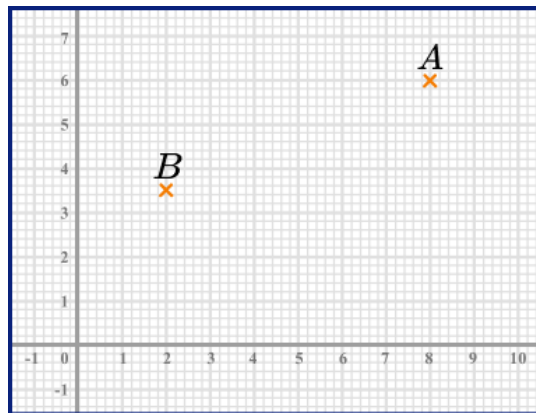
- 3) Expand:

$$5(2x + 3) = 10x + 15$$

- 4) Write down the coordinates of A and B.

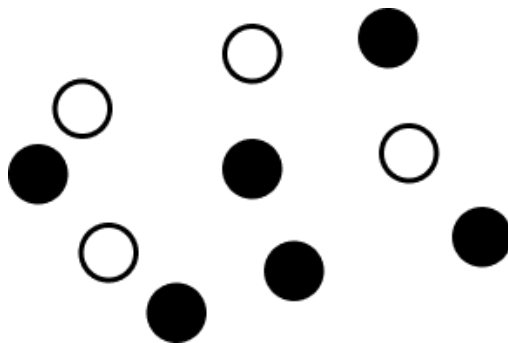
A(8, 6)

B(2, 3.5)



- 5) Write the ratio of black to white in its simplest form.

3 : 2



Week 4: Day 2

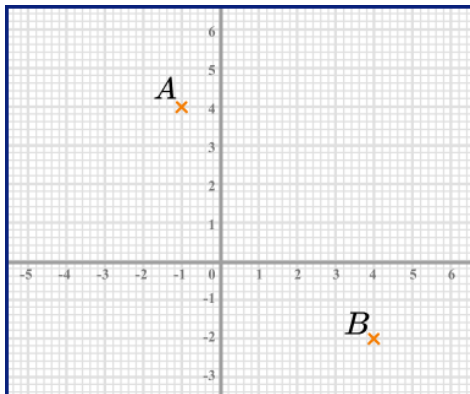
1) Write 8% as a decimal.

2) What is 20% of 40?

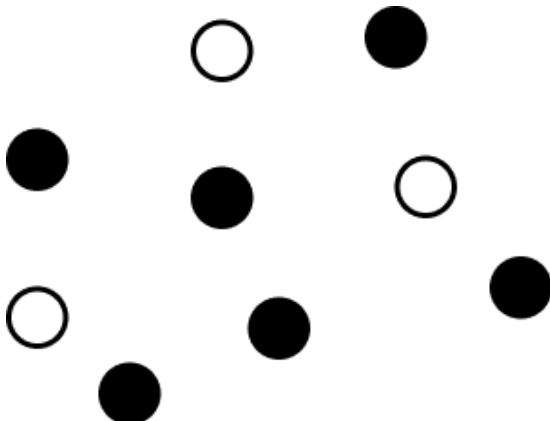
3) Expand:

$$2(3a - 2) =$$

4) Write down the coordinates of A and B.



5) Write the ratio of black to white in its simplest form.



Week 4: Day 2 Answers

- 1) Write 8% as a decimal.

0.08

- 2) What is 20% of 40?

8

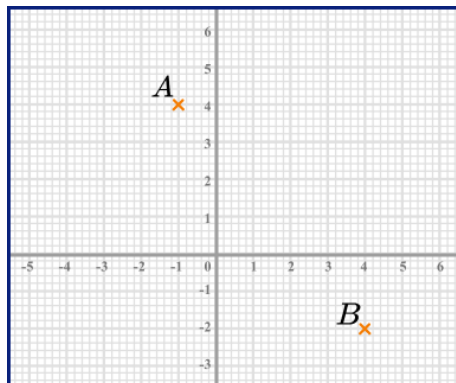
- 3) Expand:

$$2(3a - 2) = 6a - 4$$

- 4) Write down the coordinates of A and B.

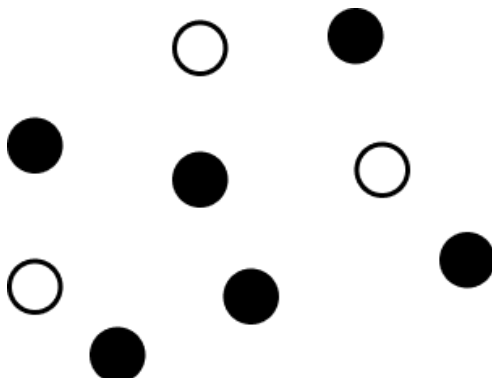
A(-1, 4)

B(4, -2)



- 5) Write the ratio of black to white in its simplest form.

2 : 1



Week 4: Day 3

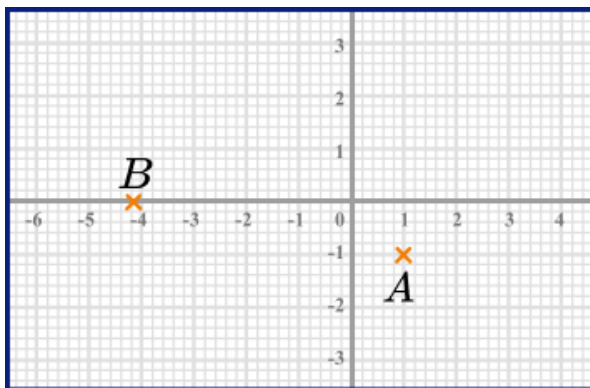
1) Write 2.4% as a decimal.

2) What is 50% of 30?

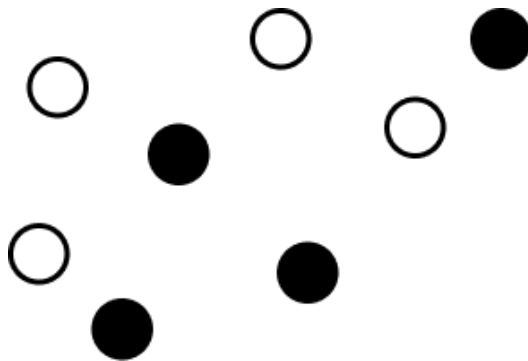
3) Expand:

$$4(2a + b) =$$

4) Write down the coordinates of A and B.



5) Write the ratio of black to white in its simplest form.



Week 3: Day 3 Answers

- 1) Write 2.4% as a decimal.

0.024

- 2) What is 50% of 30?

15

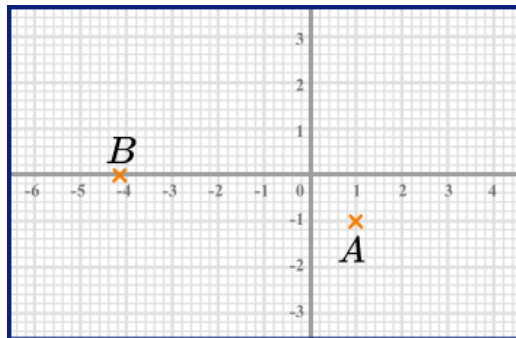
- 3) Expand:

$$4(2a + b) = 8a + 4b$$

- 4) Write down the coordinates of A and B.

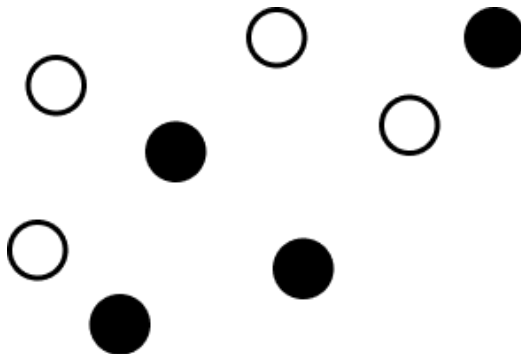
A(1, -1)

B(-4, 0)



- 5) Write the ratio of black to white in its simplest form.

1 : 1



Week 4: Day 4

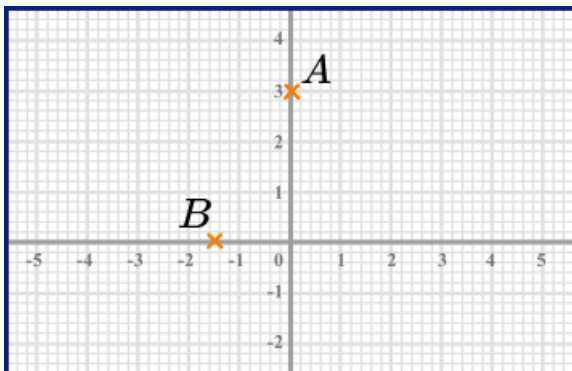
1) Write 70% as a decimal.

2) What is 5% of 60?

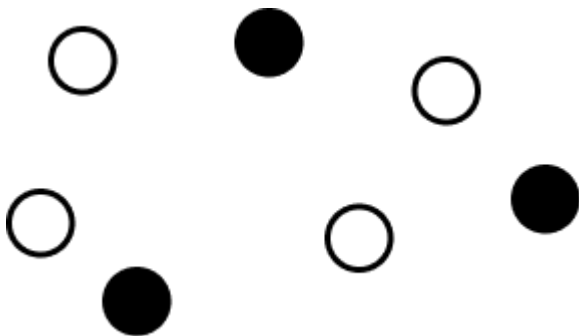
3) Expand:

$$\frac{1}{2}(2x + 8) =$$

4) Write down the coordinates of A and B.



5) Write the ratio of black to white in its simplest form.



Week 4: Day 4 Answers

- 1) Write 70% as a decimal.

0.7

- 2) What is 5% of 60?

3

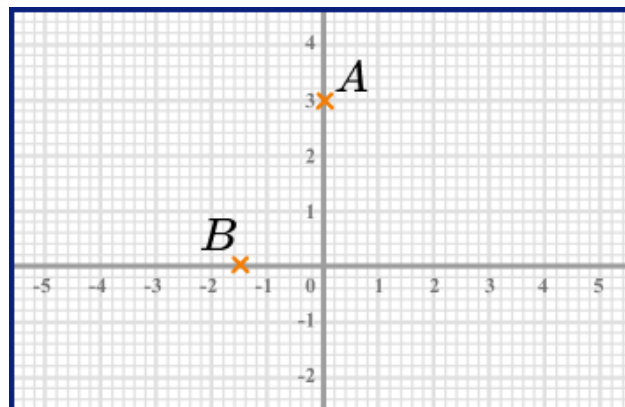
- 3) Expand:

$$\frac{1}{2}(2x + 8) = x + 4$$

- 4) Write down the coordinates of A and B.

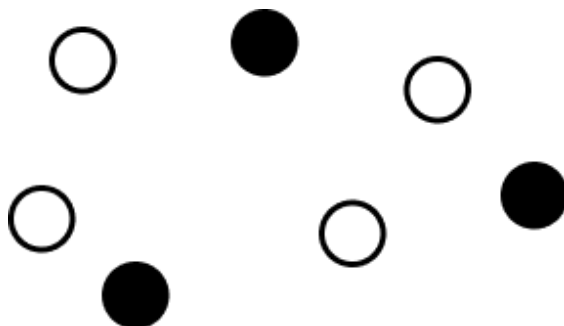
A(0, 3)

B(-1.5, 0)



- 5) Write the ratio of black to white in its simplest form.

3 : 4



Week 4: Day 5

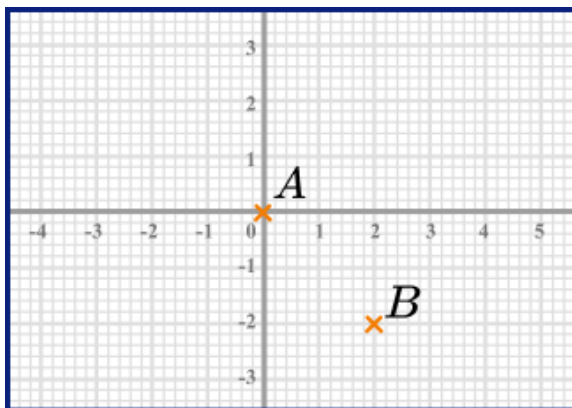
1) Write 125% as a decimal.

2) What is 15% of 70?

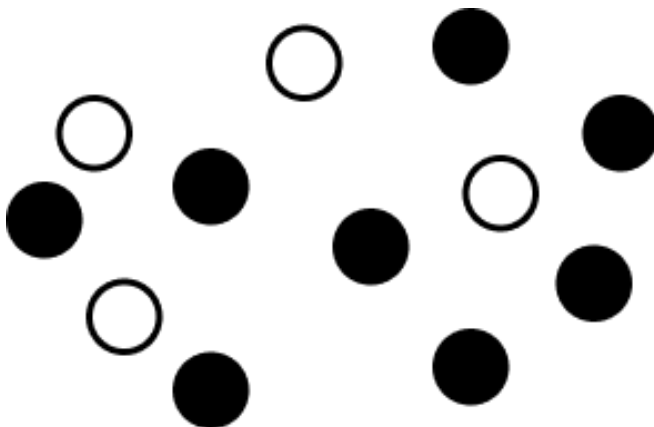
3) Expand:

$$y(4 - y) =$$

4) Write down the coordinates of A and B.



5) Write the ratio of black to white in its simplest form.



Week 4: Day 5 Answers

- 1) Write 125% as a decimal.

1.25

- 2) What is 15% of 70?

10.5

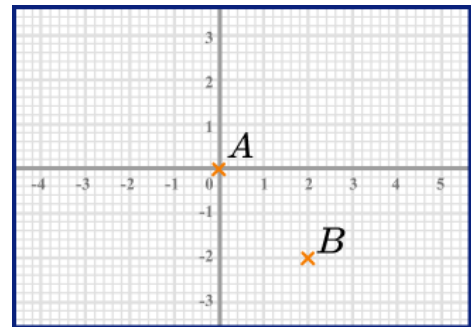
- 3) Expand:

$$y(4 - y) = 4y - y^2$$

- 4) Write down the coordinates of A and B.

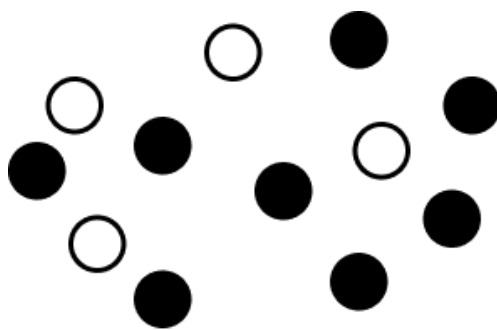
A(0, 0)

B(2, -2)



- 5) Write the ratio of black to white in its simplest form.

2 : 1



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