

Week 11

This week in a nutshell:

Every topic this week has been seen before. This is an excellent opportunity for students to demonstrate their fluency, and show just how much confidence they have built up. You may wish to allow some competition (see if students can maintain accuracy whilst completing the questions slightly quicker each day).

Question 1: BIDMAS

Question 2: Calculating percentage change

Question 3: Solving equations

Question 4: Plotting coordinates

Question 5: Using Pythagoras' Theorem

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: **BIDMAS**

- In which other topics is BIDMAS essential?

Question 2: **Calculating percentage change**

- When would you use percentage change in real life?

Question 3: **Solving equations**

- *reflect on previous learning*

Question 4: **Plotting coordinates**

- How might plotting coordinates extend to more than two dimensions?

Question 5: **Using Pythagoras' Theorem**

- Is "using Pythagoras' Theorem" a method or a property?

Week 11: Day 1

1) Evaluate:

$$31 - 6 \times 5 =$$

2) Work out the percentage change when 125kg has increased to 150kg.

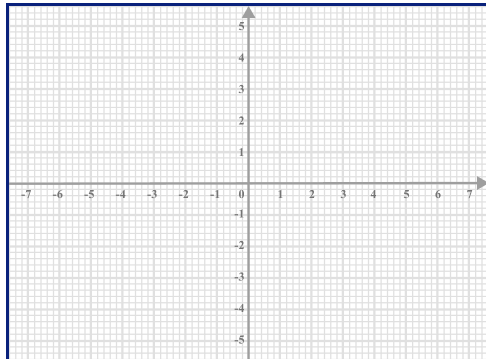
3) Solve:

$$5x - 7 = 28$$

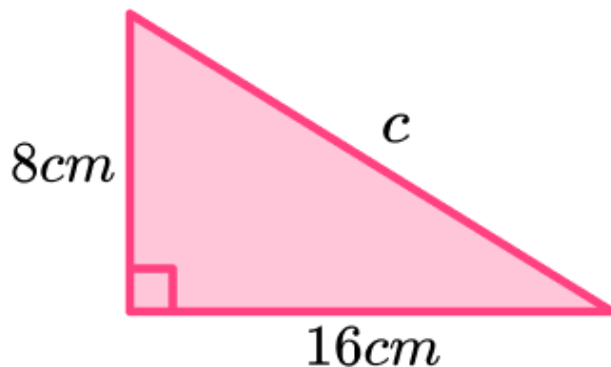
4) Plot and label:

$A(3, 0)$

$B(-1, 4)$



5) Work out the length side c , giving your answer to one decimal place.



Week 11: Day 1 Answers

1) Evaluate:

$$31 - 6 \times 5 = 31 - 30 \\ = 1$$

2) Work out the percentage change when 125kg has increased to 150kg.

20% increase

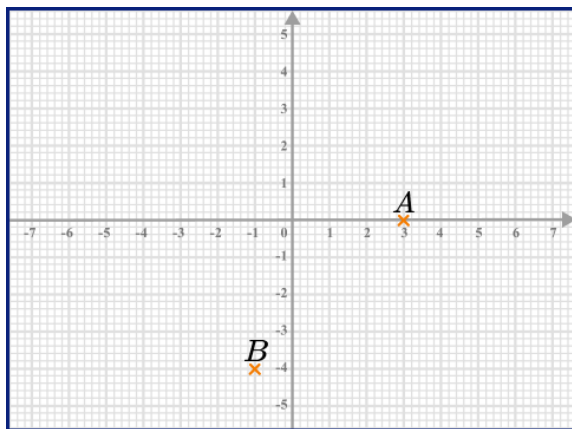
3) Solve:

$$5x - 7 = 28 \quad x = 7$$

4) Plot and label:

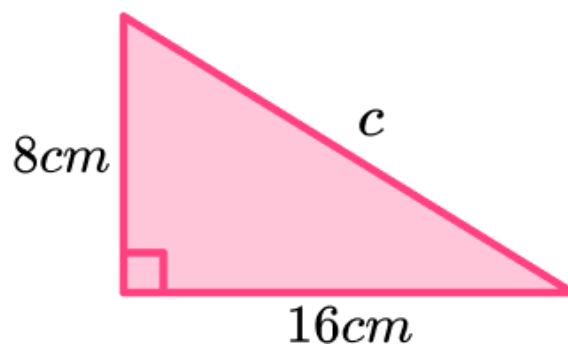
$A(3, 0)$

$B(-1, 4)$



5) Work out the length side c , giving your answer to one decimal place.

17.9cm



Week 11: Day 2

1) Evaluate:

$$4 \times 3^2 + 8 \div 2 =$$

2) Work out the percentage change when £240 has increased to £300.

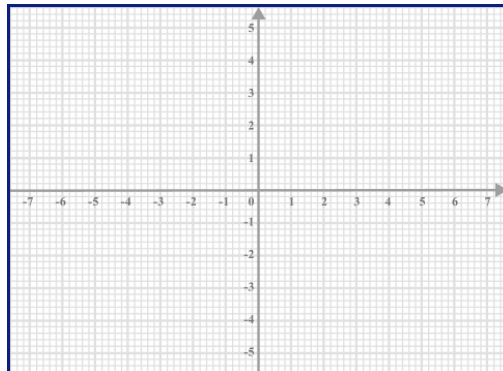
3) Solve:

$$9 + 4x = 37$$

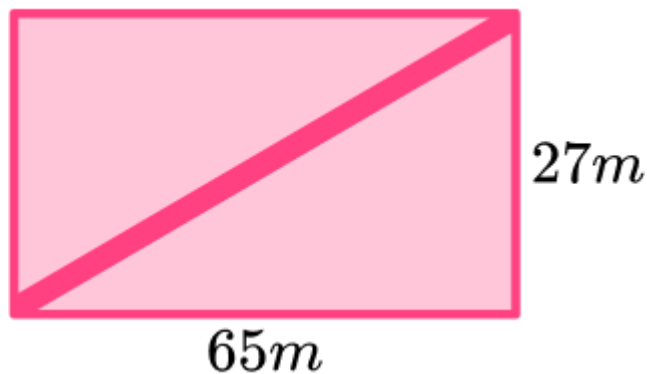
4) Plot and label:

$A(-4, -2)$

$B(0, 4.5)$



5) A footpath runs diagonally from corner to corner of a rectangular field. How long is the footpath to the nearest metre?



Week 11: Day 2 Answers

1) Evaluate:

$$\begin{aligned}
 4 \times 3^2 + 8 \div 2 &= 4 \times 9 + 4 \\
 &= 36 + 4 \\
 &= 40
 \end{aligned}$$

2) Work out the percentage change when £240 has increased to £300.

25% increase

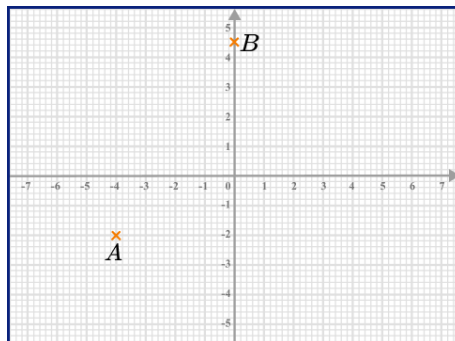
3) Solve:

$$9 + 4x = 37 \quad x = 7$$

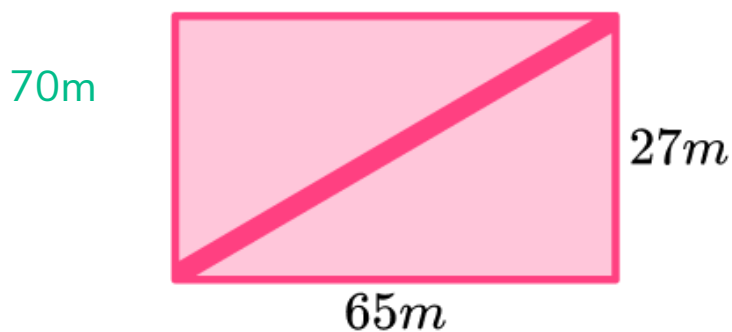
4) Plot and label:

$A(-4, -2)$

$B(0, 4.5)$



5) A footpath runs diagonally from corner to corner of a rectangular field. How long is the footpath to the nearest metre?



Week 11: Day 3

1) Evaluate:

$$5 + (9 - 6) \times 5 =$$

2) Work out the percentage change when \$300 has decreased to \$225.

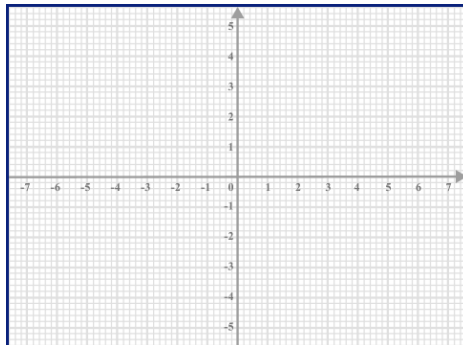
3) Solve:

$$2x - 5 = 22$$

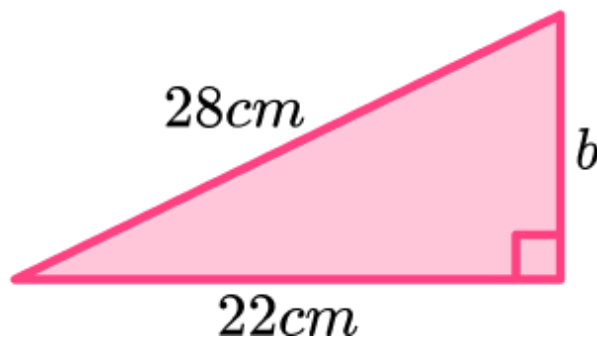
4) Plot and label:

$A(0, 0)$

$B(-3, 3)$



5) Work out the length side b , giving your answer to one decimal place.



Week 11: Day 3 Answers

1) Evaluate:

$$\begin{aligned} 5 + (9 - 6) \times 5 &= 5 + 3 \times 5 \\ &= 5 + 15 \\ &= 20 \end{aligned}$$

2) Work out the percentage change when \$300 has decreased to \$225.

25% decrease

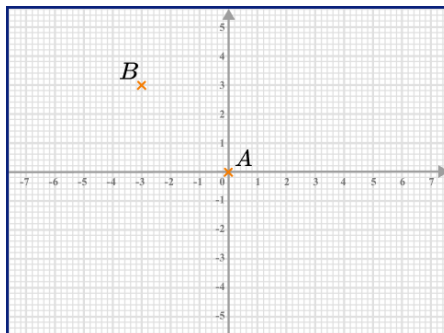
3) Solve:

$$2x - 5 = 22 \quad x = 13.5$$

4) Plot and label:

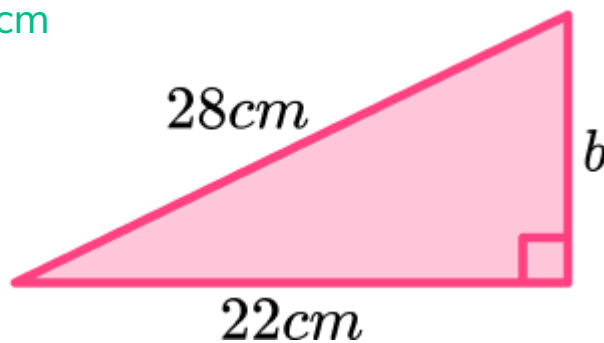
$A(0, 0)$

$B(-3, 3)$



5) Work out the length side b , giving your answer to one decimal place.

17.3cm



Week 11: Day 4

1) Evaluate:

$$8 \div 2^3 - 3^2 =$$

2) Work out the percentage change when €65 has increased to €78.

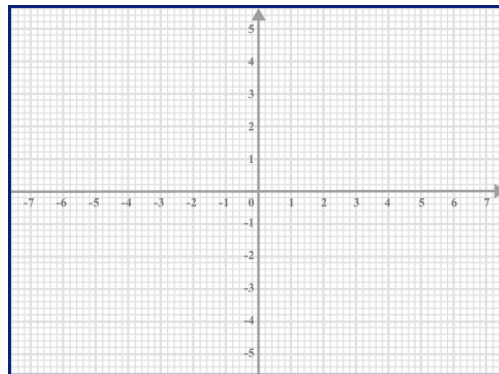
3) Solve:

$$24 - 3x = 5x$$

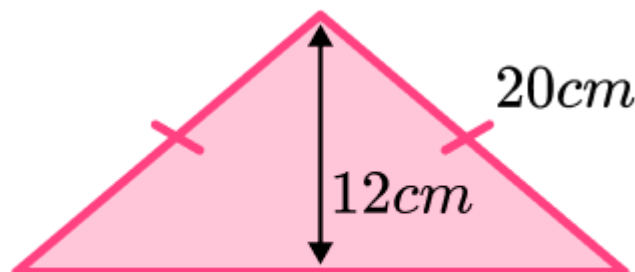
4) Plot and label:

$A(2, 5)$

$B(0, -2.5)$



5) How long is the base of this isosceles triangle?



Week 11: Day 4 Answers

1) Evaluate:

$$\begin{aligned}8 \div 2^3 - 3^2 &= 8 \div 8 - 9 \\&= 1 - 9 \\&= -8\end{aligned}$$

2) Work out the percentage change when €65 has increased to €78.
20% increase

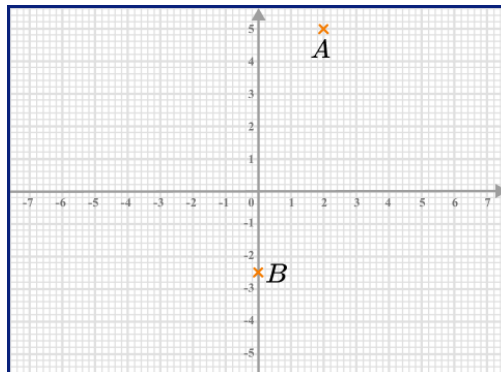
3) Solve:

$$24 - 3x = 5x \quad x = 3$$

4) Plot and label:

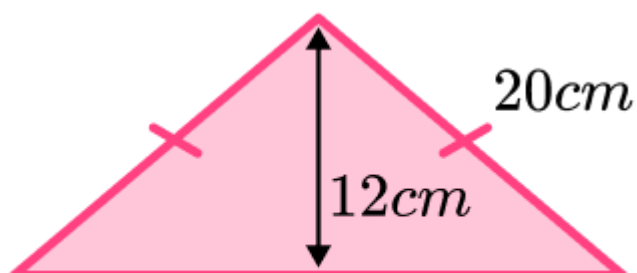
$A(2, 5)$

$B(0, -2.5)$



5) How long is the base of this isosceles triangle?

32cm



Week 11: Day 5

1) Evaluate:

$$(8 - 3)^2 - (3 - 5)^2 =$$

2) Work out the percentage change when 3.2kg has decreased to 2.8kg.

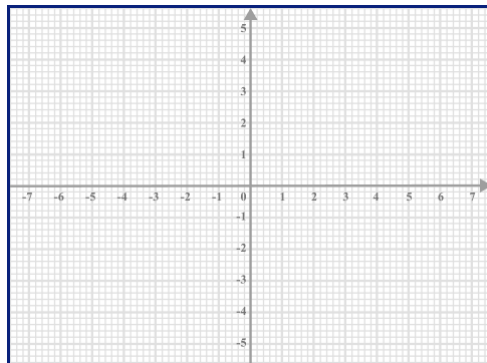
3) Solve:

$$9x - 12 = 34 + 8x$$

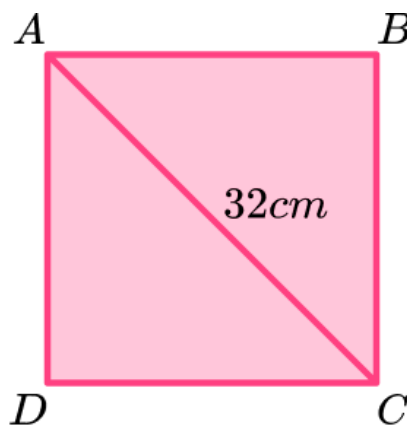
4) Plot and label:

$A(-6, 0)$

$B(1, -4)$



5) $ABCD$ is a square. Given the length of AC , work out the length of one side of the square.



Week 11: Day 5 Answers

1) Evaluate:

$$\begin{aligned}(8 - 3)^2 - (3 - 5)^2 &= 5^2 - (-2)^2 \\ &= 25 - 4 \\ &= 21\end{aligned}$$

2) Work out the percentage change when 3.2kg has decreased to 2.8kg.
12.5% decrease

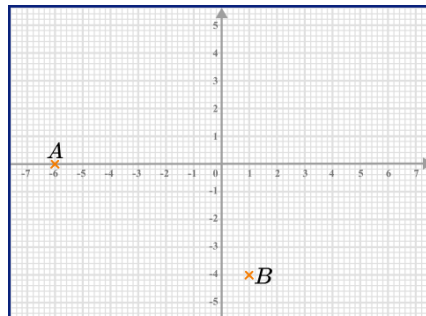
3) Solve:

$$9x - 12 = 34 + 8x \quad x = 46$$

4) Plot and label:

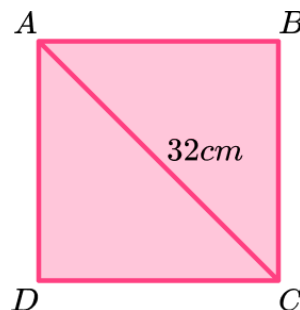
$A(-6, 0)$

$B(1, -4)$



5) $ABCD$ is a square. Given the length of AC , work out the length of one side of the square.

22.6cm
to 1dp



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