

Week 6

This week in a nutshell:

Question 5 looks at Pythagoras' Theorem and concentrates on solving a problem. Not all of the questions involve Pythagorean triples so there is a solid argument for calculators to be used; this also gives students the chance to apply their knowledge of a new topic without overreliance on arithmetic accuracy.

Question 1: Simplifying expressions

Question 2: BIDMAS

Question 3: Percentage of an amount

Question 4: Reading coordinates

Question 5: Pythagoras' Theorem problems

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: **Simplifying expressions**

- What do you have to consider when simplifying an expression?

Question 2: **BIDMAS**

- What would happen if we decided to change the order of BIDMAS? Would this work?

Question 3: **Percentage of an amount**

- How are finding the percentage of an amount and finding the fraction of an amount the same or difference?

Question 4: **Reading coordinates**

- *reflect on previous learning*

Question 5: **Pythagoras' Theorem problems**

- What information is required to solve a problem using Pythagoras' Theorem?

Week 6: Day 1

- 1) Simplify the expression:

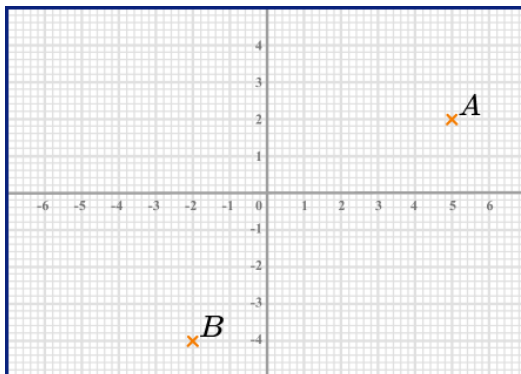
$$3b - 7b + 6b \equiv$$

- 2) Evaluate:

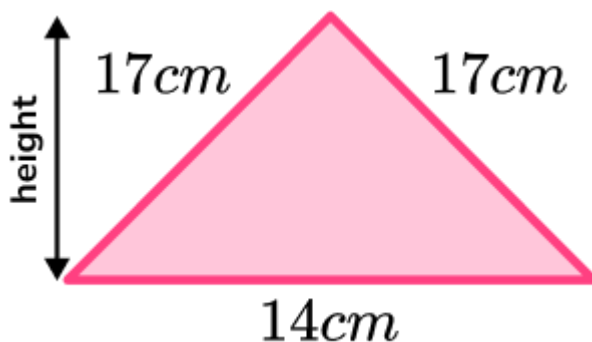
$$17 - 8 \times 2 =$$

- 3) What is 60% of 130?

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



- 5) Find the height of this isosceles triangle.



Week 6: Day 1 Answers

- 1) Simplify the expression:

$$3b - 7b + 6b \equiv 2b$$

- 2) Evaluate:

$$17 - 8 \times 2 = 17 - 16 \\ = 1$$

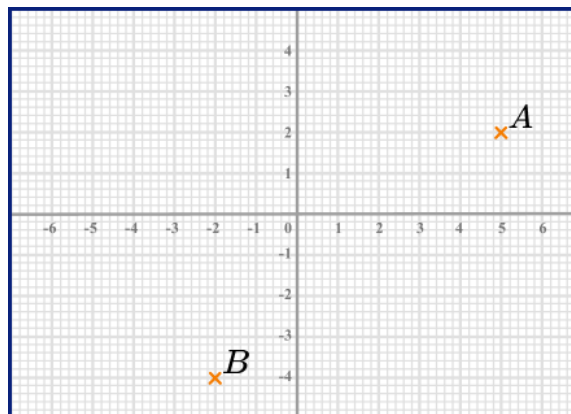
- 3) What is 60% of 130?

78

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

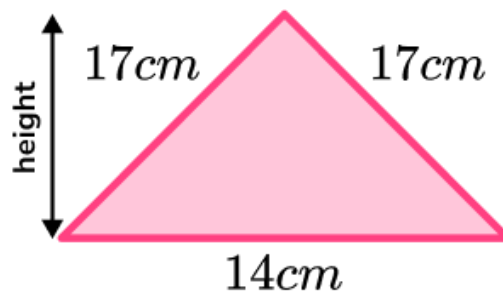
A(5, 2)

B(-2, -4)



- 5) Find the height of this isosceles triangle.

15.49cm (2dp)



Week 6: Day 2

- 1) Simplify the expression:

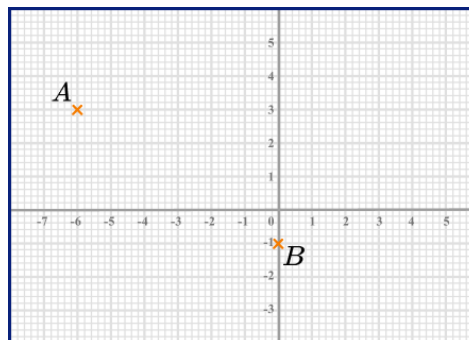
$$2a \times 3 \times 2b \equiv$$

- 2) Evaluate:

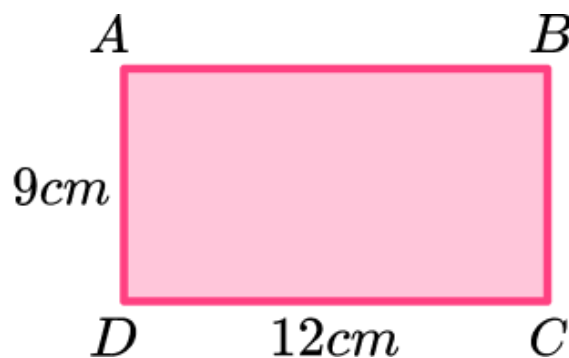
$$3 \times 9 + 9 \div 3 =$$

- 3) What is 15% of 70?

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



- 5) Find the length of the diagonal AC in this rectangle.



Week 6: Day 2 Answers

- 1) Simplify the expression:

$$2a \times 3 \times 2b \equiv 12ab$$

- 2) Evaluate:

$$3 \times 9 + 9 \div 3 = 27 + 3 \\ = 30$$

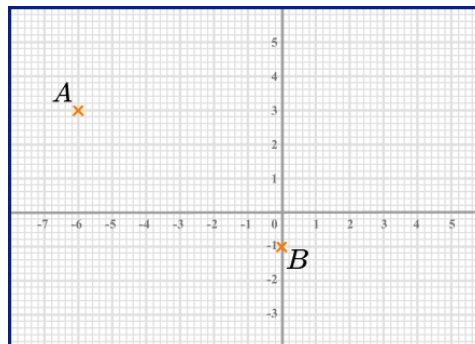
- 3) What is 15% of 70?

10.5

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

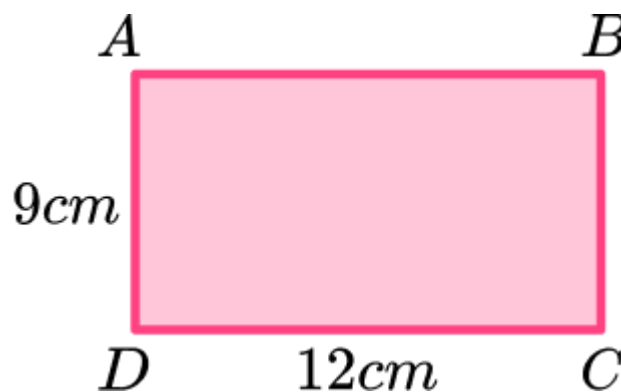
$A(-6, 3)$

$B(0, -1)$



- 5) Find the length of the diagonal AC in this rectangle.

15cm



Week 6: Day 3

- 1) Simplify the expression:

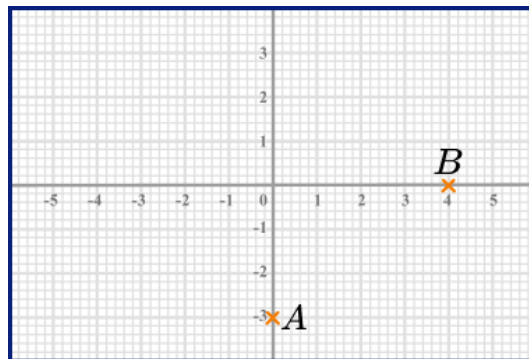
$$16g \div 4g \equiv$$

- 2) Evaluate:

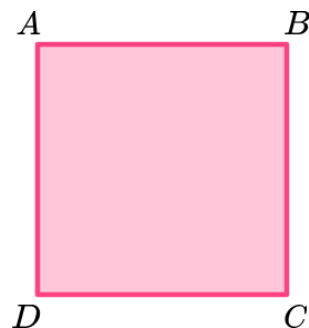
$$12 \times 3 - 6^2 =$$

- 3) What is 84% of 320?

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



- 5) The area of this square is 36 cm^2 . What is the length of the diagonal *AC*?



Week 6: Day 3 Answers

- 1) Simplify the expression:

$$16g \div 4g \equiv 4$$

- 2) Evaluate:

$$12 \times 3 - 6^2 = 36 - 36 \\ = 0$$

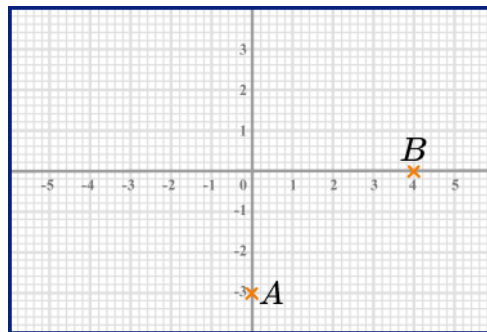
- 3) What is 84% of 320?

268.8

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

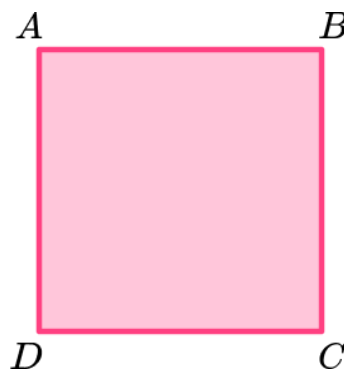
A(0, -3)

B(4, 0)



- 5) The area of this square is 36 cm^2 . What is the length of the diagonal *AC*?

8.49cm (2dp)



Week 6: Day 4

- 1) Simplify the expression:

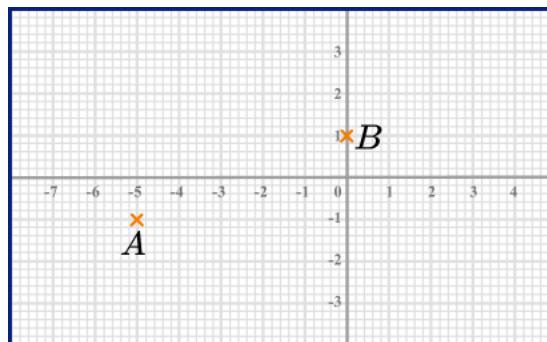
$$3r - 7r + 4r \equiv$$

- 2) Evaluate:

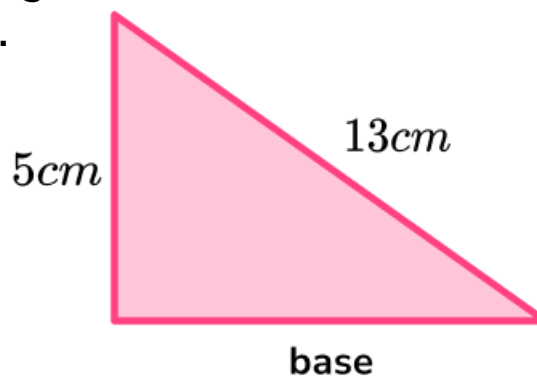
$$4 \times (2 + 5) \div 2 =$$

- 3) What is 95% of 85?

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



- 5) By first finding the length of the base, determine the area of this right-angled triangle.



Week 6: Day 4 Answers

- 1) Simplify the expression:

$$3r - 7r + 4r \equiv 0$$

- 2) Evaluate:

$$4 \times (2 + 5) \div 2 = 4 \times 7 \div 2 \\ = 14$$

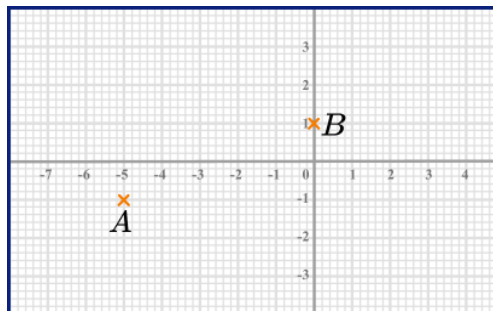
- 3) What is 95% of 85?

80.75

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

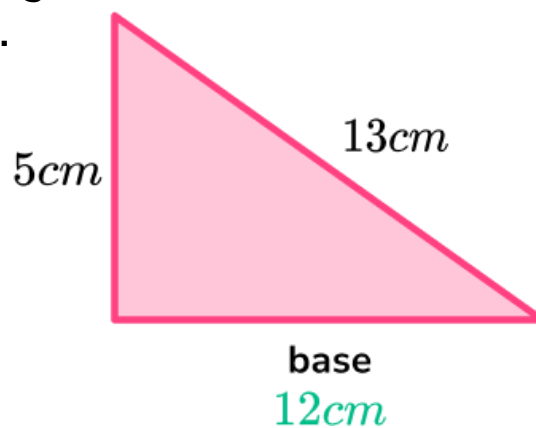
$A(-5, -1)$

$B(0, 1)$



- 5) By first finding the length of the base, determine the area of this right-angled triangle.

30cm^2



Week 6: Day 5

- 1) Simplify the expression:

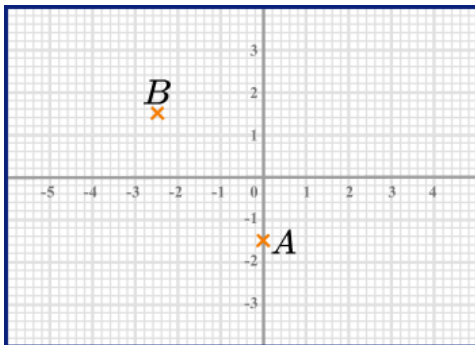
$$\frac{7m+m-6m}{5m-3m} \equiv$$

- 2) Evaluate:

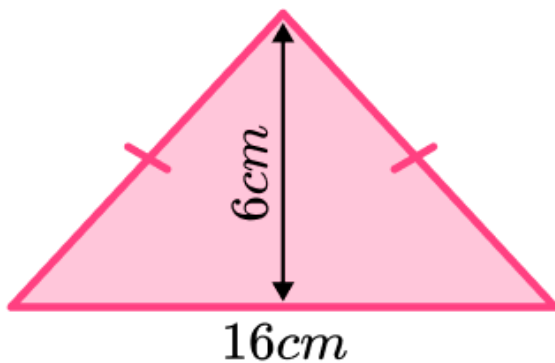
$$5 \times 10 - (6 - 9)^2 =$$

- 3) What is 28% of 730?

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



- 5) Find the perimeter of this isosceles triangle.



Week 6: Day 5 Answers

- 1) Simplify the expression:

$$\frac{7m+m-6m}{5m-3m} \equiv 1$$

- 2) Evaluate:

$$\begin{aligned} 5 \times 10 - (6 - 9)^2 &= 50 - (-3)^2 \\ &= 50 - 9 \\ &= 41 \end{aligned}$$

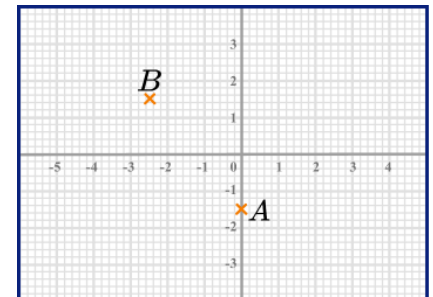
- 3) What is 28% of 730?

204.4

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

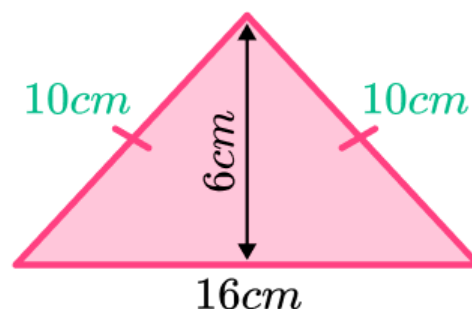
A(0, -1.5)

B(-2.5, 1.5)



- 5) Find the perimeter of this isosceles triangle.

36cm



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