

Week 9

This week in a nutshell:

Question 5 looks at one aspect of trigonometry, and a calculator (set to degrees) will be needed. Answers have been rounded to a suitable degree of accuracy, which you are welcome to adjust depending on your students' requirements. The other questions provide practice in familiar topics to build fluency and confidence.

Question 1: Finding a fraction of an amount

Question 2: Identifying primes

Question 3: Products of binomials

Question 4: Describing a translation

Question 5: Using trigonometry to find the length of a shorter side in a right-angled triangle

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: **Finding a fraction of an amount**

- ***reflect on previous learning***

Question 2: **Identifying primes**

- **What strategy do you use for identifying primes?**

Question 3: **Products of binomials**

- **What could be represented using products of binomials?**

Question 4: **Describing a translation**

- **Why do you think it is called a vector?**

Question 5: **Using trigonometry to find the length of a shorter side in a right-angled triangle**

- **How do you remember the trigonometric functions?**

Week 9: Day 1

1) Find $\frac{3}{4}$ of 252.

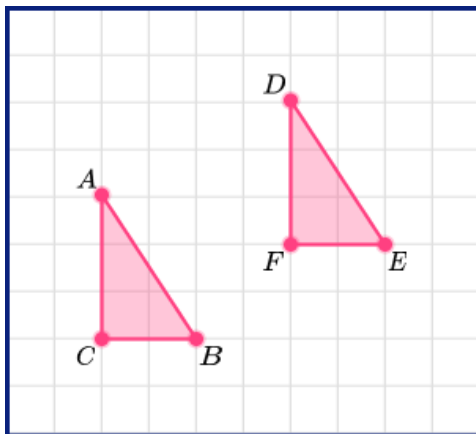
2) Identify the prime number:

21 23 25

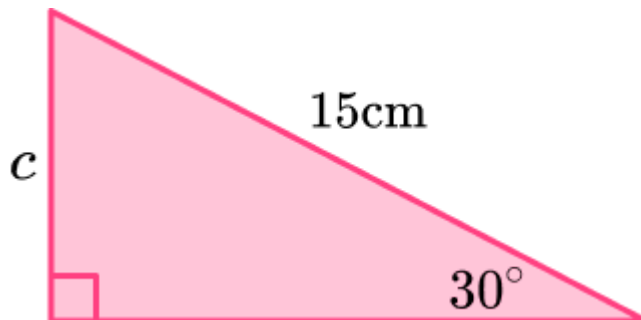
3) Expand and simplify:

$$(x + 5)(x - 7) =$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side c .



Week 9: Day 1 Answers

1) Find $\frac{3}{4}$ of 252. 189

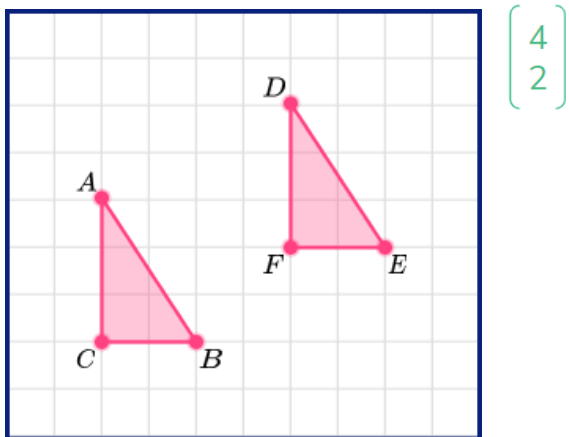
2) Identify the prime number:

21 23 25

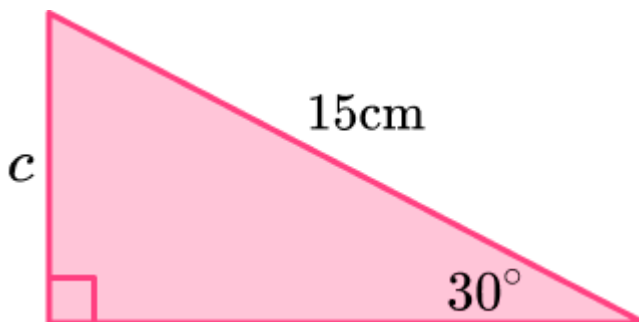
3) Expand and simplify:

$$(x + 5)(x - 7) = x^2 - 2x - 35$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side c . 7.5cm



Week 9: Day 2

1) Find $\frac{4}{5}$ of 160.

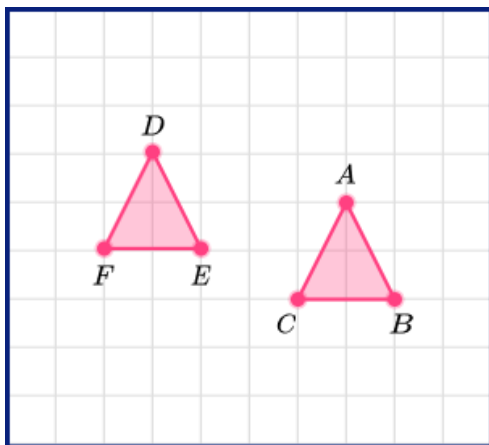
2) Identify the prime number:

39 43 49

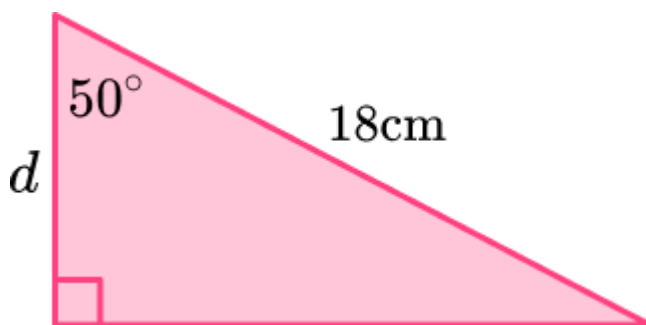
3) Expand and simplify:

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

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side d .



Week 9: Day 2 Answers

1) Find $\frac{4}{5}$ of 160. 128

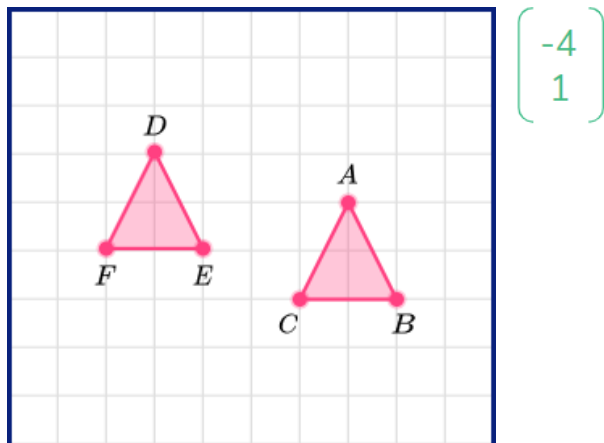
2) Identify the prime number:

39 43 49

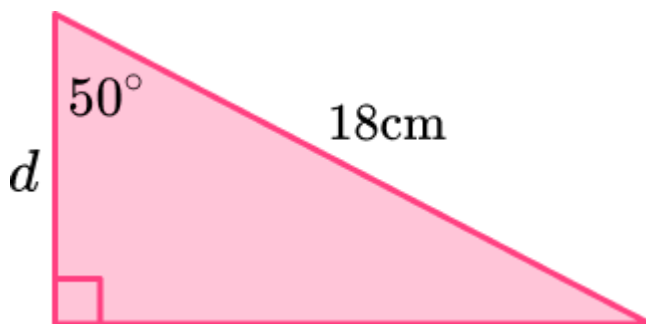
3) Expand and simplify:

$$(x + a)(x - b) = x^2 + ax - bx - ab$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side d . 11.6cm (1dp)



Week 9: Day 3

1) Find $\frac{2}{3}$ of 279.

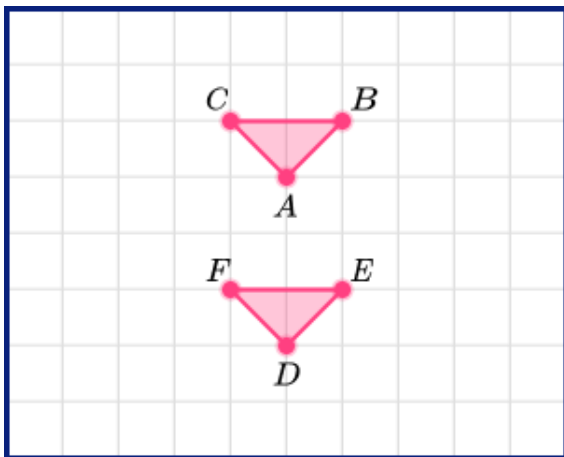
2) Identify the prime number:

51 57 59

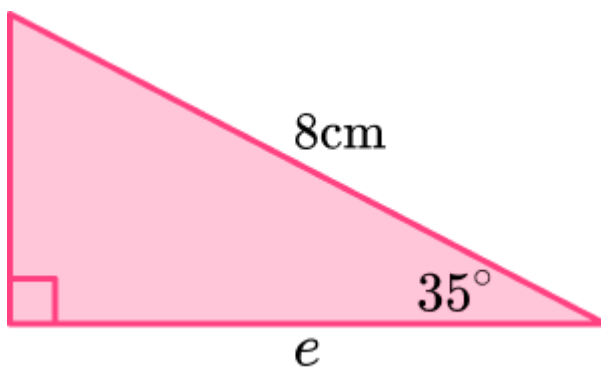
3) Expand and simplify:

$$(2 + x)(2 - x) =$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side e .



Week 9: Day 3 Answers

1) Find $\frac{2}{3}$ of 279. 186

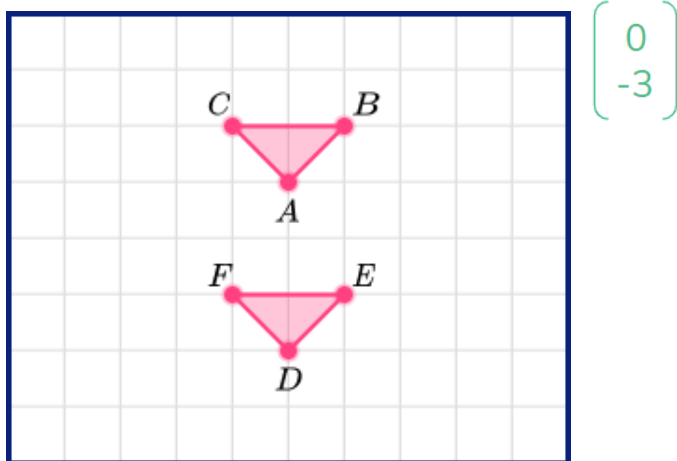
2) Identify the prime number:

51 57 59

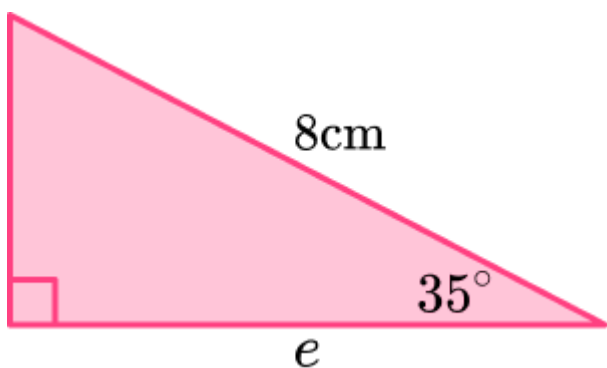
3) Expand and simplify:

$$(2 + x)(2 - x) = 4 - x^2$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side e . 6.6cm (1dp)



Week 9: Day 4

1) Find $\frac{5}{6}$ of 282.

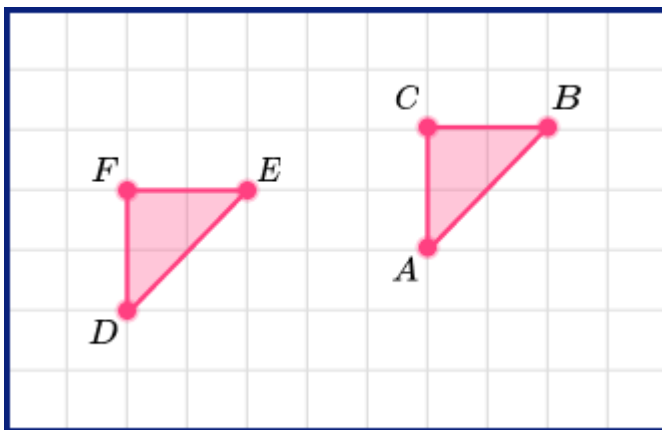
2) Identify the prime number:

71 77 81

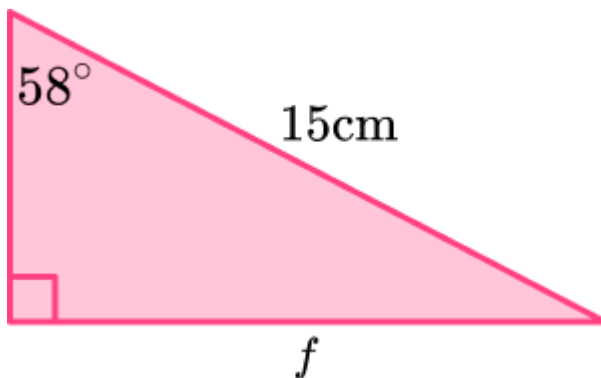
3) Expand and simplify:

$$2(3x + 1)(x - 3) =$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side f .



Week 9: Day 4 Answers

1) Find $\frac{5}{6}$ of 282. 235

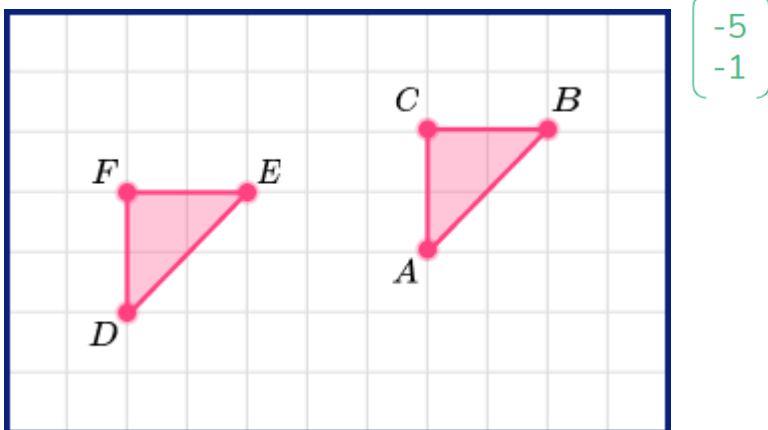
2) Identify the prime number:

71 77 81

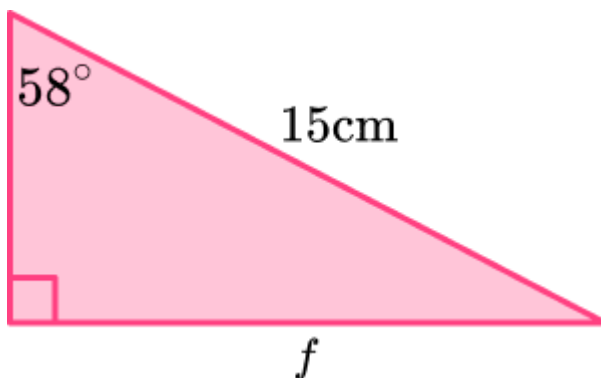
3) Expand and simplify:

$$2(3x + 1)(x - 3) = 6x^2 - 16x - 6$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side f . 12.7cm (1dp)



Week 9: Day 5

1) Find $\frac{7}{8}$ of 44.

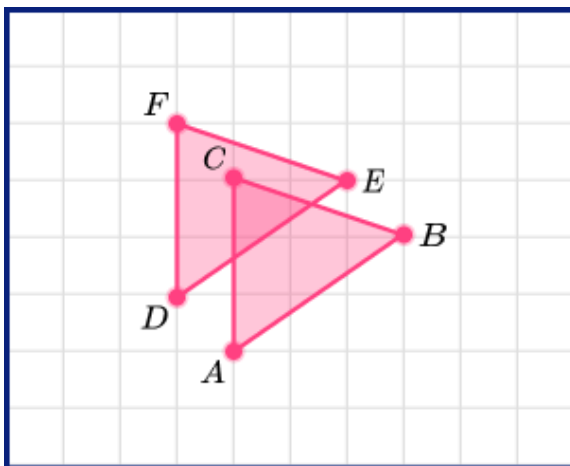
2) Identify the prime number:

101 111 110

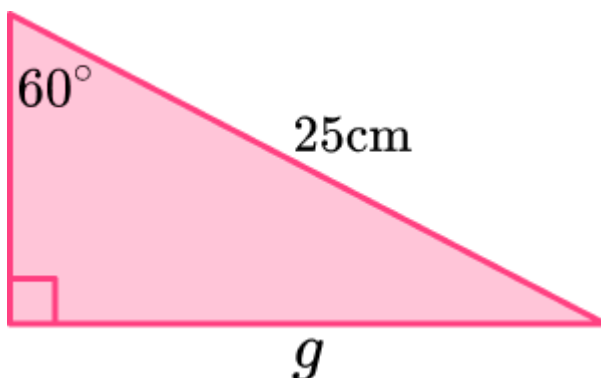
3) Expand and simplify:

$$(2x - 5)(5x - 2) =$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side g .



Week 9: Day 5 Answers

1) Find $\frac{7}{8}$ of 44. 38.5

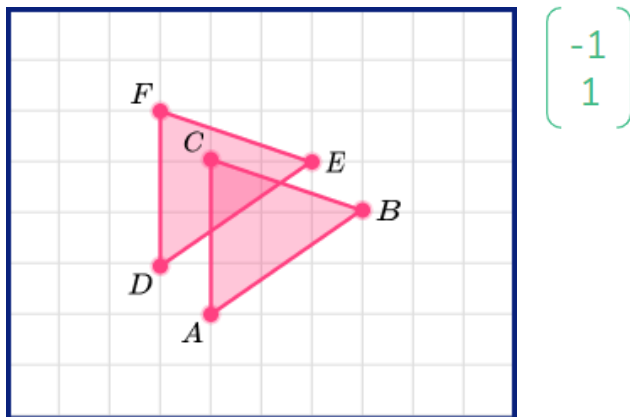
2) Identify the prime number:

101 111 110

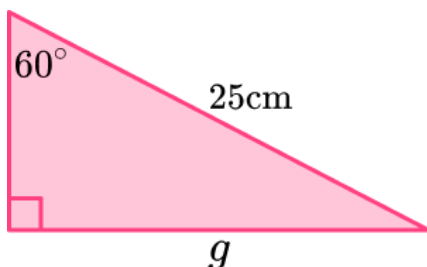
3) Expand and simplify:

$$(2x - 5)(5x - 2) = 10x^2 - 29x + 10$$

4) Write the column vector that translates triangle ABC to triangle DEF .



5) Use trigonometry to find the length of side g . 21.7cm (1dp)



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