

National 5 Maths Trigonometric Graphs

SQA past paper and specimen paper questions and answers by topic

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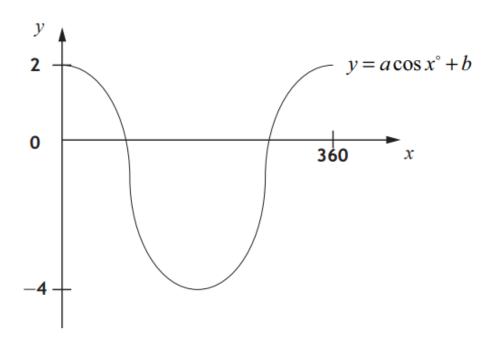
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National 5 Maths SQA 2013 Specimen Paper 2 Question 10



Part of the graph of $y = a\cos x^{\circ} + b$ is shown below.



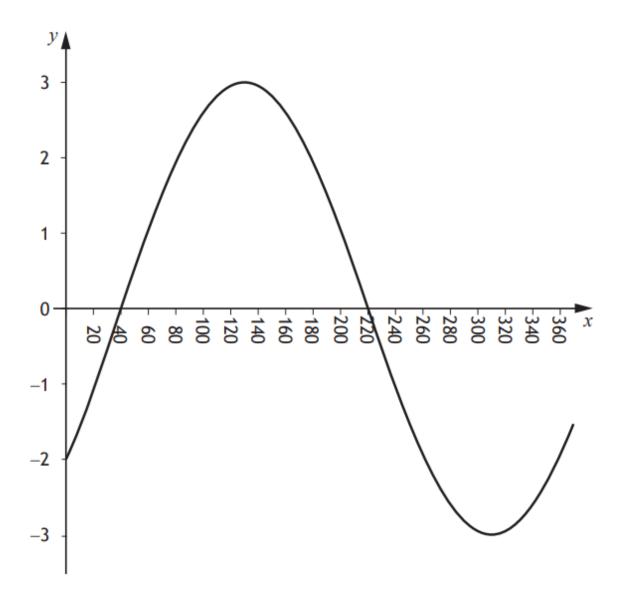
- (a) Explain how you can tell from the graph that a=3 and b=-1.
- 2
- (b) Calculate the x-coordinates of the points where the graph cuts the x-axis.

- (a) a=3 because 2-(-4)=6, which is $3\times(1-(-1))$. b=-1 because the graph of $y=3\cos x$ has been moved down 1.
- (b) 70·5°, 289·5°

National 5 Maths SQA 2014 Paper 1 Question 10



The graph of $y = a \sin(x+b)^{\circ}$, $0 \le x \le 360$, is shown below.



Write down the values of a and b.

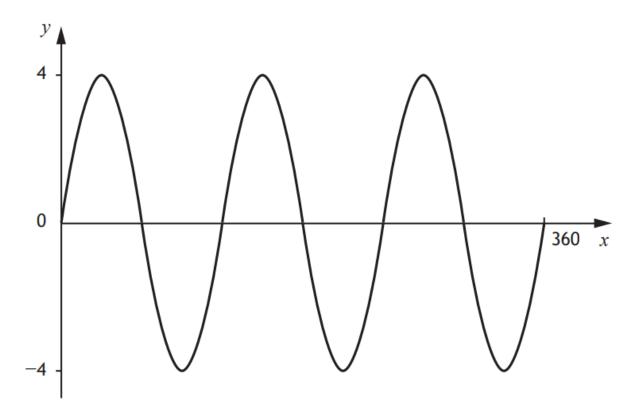
2

$$a = 3$$
$$b = -40$$

National 5 Maths SQA 2015 Paper 1 Question 6



Part of the graph of $y = a \sin bx^{\circ}$ is shown in the diagram.



State the values of a and b.

2

$$a = 4$$

$$b = 3$$

National 5 Maths SQA 2015 Paper 1 Question 9



Write the following in order of size starting with the smallest.

cos 90°

cos 100°

cos 300°

Justify your answer.

2

Answer:

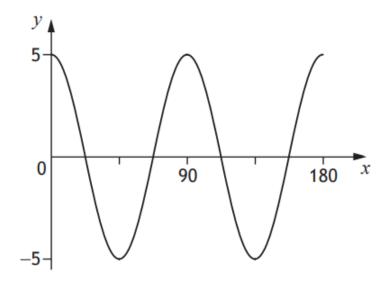
cos 100°, cos 90°, cos 300°

The justification should use either the ASTC quadrant diagram or the graph of $y = \cos x$.

National 5 Maths SQA 2018 Paper 1 Question 6



Part of the graph of $y = a \cos bx^{\circ}$ is shown in the diagram.



State the values of a and b.

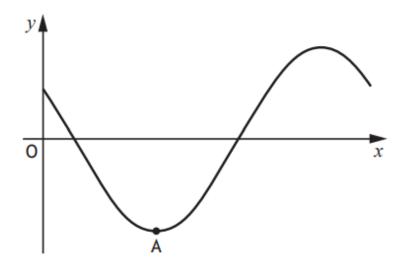
2

$$a = 5$$

$$b = 4$$

National 5 Maths SQA 2019 Paper 1 Question 13 National 5 Maths Maths.scot

Part of the graph of $y = 3\cos(x+45)^\circ$ is shown in the diagram.



The graph has a minimum turning point at A. State the coordinates of A.

2

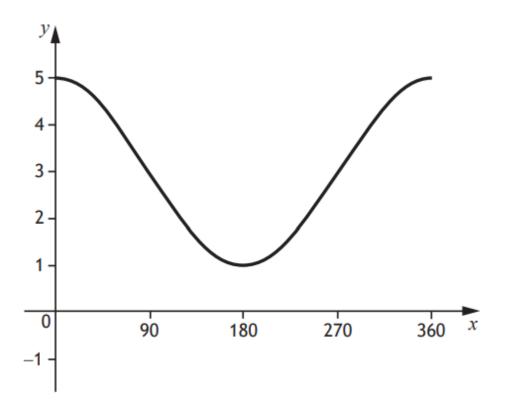
Answer:

(135, -3)

National 5 Maths SQA 2021 Paper 1 Question 13



The graph of $y = a \cos x^{\circ} + b$, $0 \le x \le 360$, is shown.



State the values of a and b.

2

$$a = 2$$

$$b = 3$$

National 5 Maths SQA 2021 Paper 1 Question 16



2

The function f(x) is defined by $f(x) = 4\sin 3x^{\circ}$. Evaluate f(90).

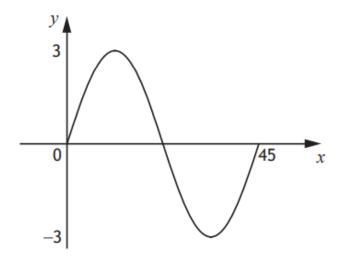
Answer:

-4

National 5 Maths SQA 2022 Paper 1 Question 8



Part of the graph of $y = a \sin bx^{\circ}$ is shown in the diagram.



(a) State the value of a.

1

(b) State the value of b.

1

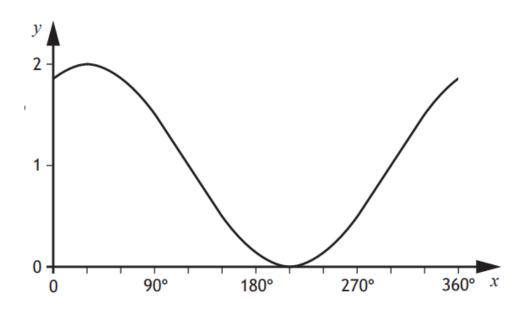
(a)
$$a = 3$$

(b)
$$b = 8$$

National 5 Maths SQA 2023 Paper 1 Question 13



Part of the graph of $y = \cos(x+a)^{\circ} + b$ is shown.



(a) State the value of a.

1

(b) State the value of b.

1

(a)
$$a = -30 (or 330)$$

(b)
$$b = 1$$