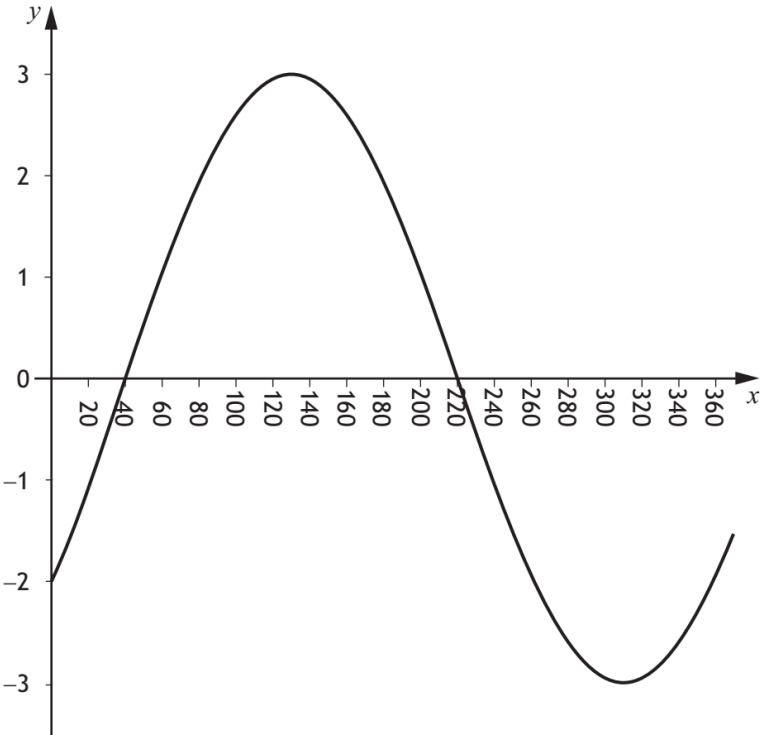
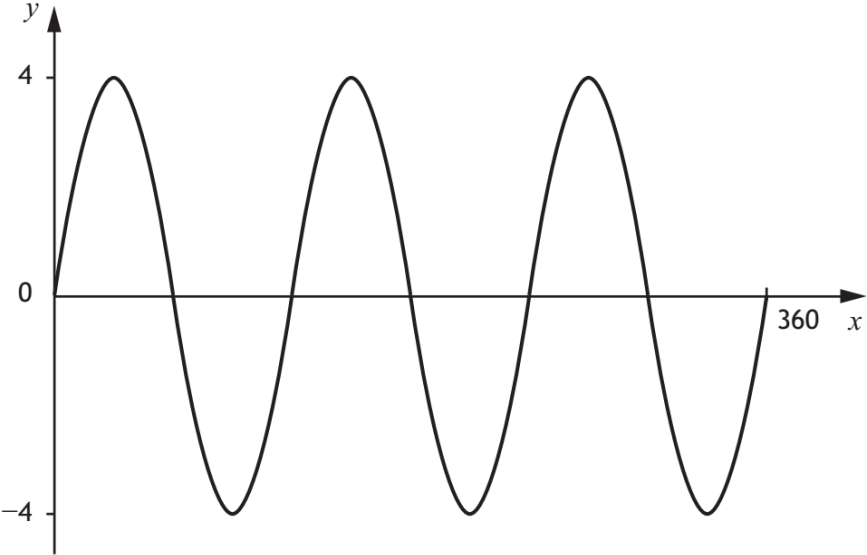
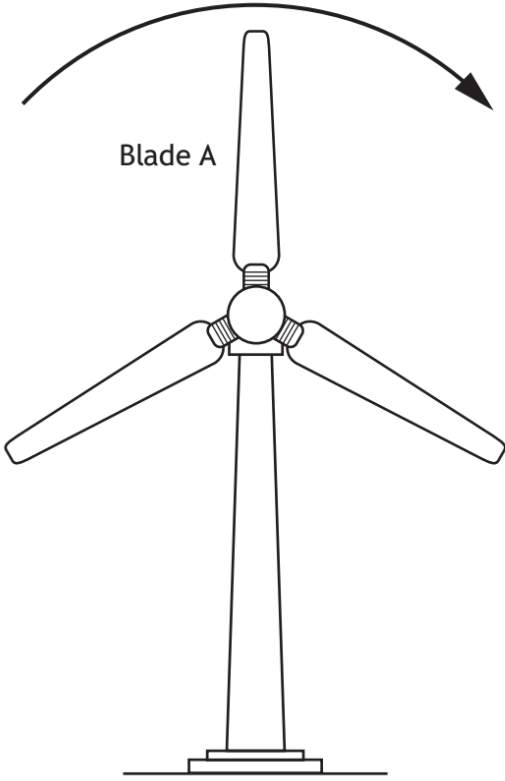
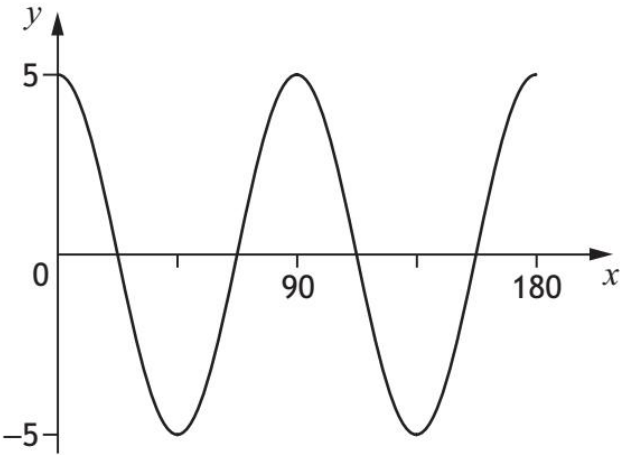
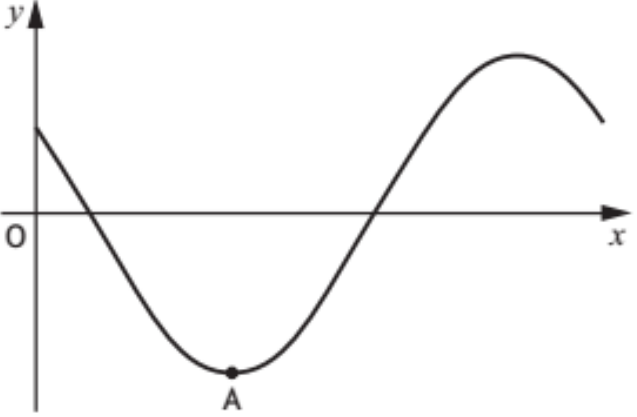


# TRIG

YEAR	PAPER	QUESTION
2014	1	<p>The graph of <math>y = a \sin(x + b)^\circ</math>, <math>0 \leq x \leq 360</math>, is shown below.</p>  <p>Write down the values of <math>a</math> and <math>b</math>.</p>
2014	2	<p>Solve the equation <math>11 \cos x^\circ - 2 = 3</math>, for <math>0 \leq x \leq 360</math>.</p>
2015	1	<p>Part of the graph of <math>y = a \sin bx^\circ</math> is shown in the diagram.</p>  <p>State the values of <math>a</math> and <math>b</math>.</p>

2015	1	<p>Write the following in order of size starting with the smallest.</p> <p style="text-align: center;"><math>\cos 90^\circ</math>      <math>\cos 100^\circ</math>      <math>\cos 300^\circ</math></p> <p>Justify your answer. <span style="float: right;">2</span></p>
2016	1	<p>Simplify</p> <p style="text-align: center;"><math>\tan^2 x^\circ \cos^2 x^\circ</math>.</p> <p>Show your working. <span style="float: right;">2</span></p>
2016	2	<p>Solve the equation <math>2 \tan x^\circ + 5 = -4</math>, for <math>0 \leq x \leq 360</math>. <span style="float: right;">3</span></p>
2017	2	<p>A wind turbine has three blades as shown below.</p> <div style="text-align: center;">  </div> <p>The height, <math>h</math> metres, of the tip of blade A above the ground in each rotation is given by</p> $h = 40 + 23 \cos x^\circ, \quad 0 \leq x < 360$ <p>where <math>x</math> is the angle blade A has turned clockwise from its vertical position.</p> <p>(a) Calculate the height of the tip of blade A after it has turned through an angle of <math>60^\circ</math>. <span style="float: right;">1</span></p> <p>(b) Find the minimum height of the tip of blade A above the ground. <span style="float: right;">1</span></p> <p>(c) Calculate the values of <math>x</math> for which the tip of blade A is 61 metres above the ground. <span style="float: right;">4</span></p>

2018	1	<p>Part of the graph of <math>y = a \cos bx^\circ</math> is shown in the diagram.</p>  <p>State the values of <math>a</math> and <math>b</math>.</p>	2
2018	1	<p>Given that <math>\cos 60^\circ = 0.5</math>, state the value of <math>\cos 240^\circ</math>.</p>	1
2018	1	<p>Express <math>\sin x^\circ \cos x^\circ \tan x^\circ</math> in its simplest form.  <b>Show your working.</b></p>	2
2018	2	<p>Solve the equation <math>7 \sin x^\circ + 2 = 3</math>, for <math>0 \leq x &lt; 360</math>.</p>	3
2019	1	<p>Part of the graph of <math>y = 3 \cos(x + 45)^\circ</math> is shown in the diagram.</p>  <p>The graph has a minimum turning point at A.  State the coordinates of A.</p>	2

2019	2	<p>Expand and simplify</p> $(\sin x^\circ + \cos x^\circ)^2.$ <p>Show your working.</p>	2
2019	2	Solve the equation $5 \cos x^\circ + 2 = 1$ , $0 \leq x < 360$ .	3
2022	1	<p>Part of the graph of <math>y = a \sin bx^\circ</math> is shown in the diagram.</p> <p>(a) State the value of <math>a</math>.</p> <p>(b) State the value of <math>b</math>.</p>	1  1
2022	2	Solve the equation $3 \sin x^\circ + 4 = 6$ , for $0 \leq x \leq 360$ .	3
2022	2	Simplify $\frac{\sin x^\circ + 2 \cos x^\circ}{\cos x^\circ}$ .	2