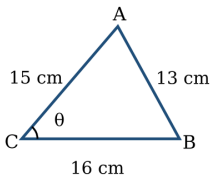
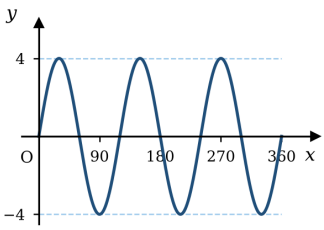
Day 350	S Tier 10-a-day

1 The diagram shows triangle ABC. (Calculator)
(a) Work out angle ACB, marked θ, to 1 decimal place.
(b) Work out the area of triangle ABC to 3 significant figures.
The diagram is not drawn accurately.



2 The 5-digit number 7535k is a multiple of 4.
k is a single digit.
Find all the possible values of k.

3 The diagram shows the graph of y = a sin bx, where a and b are positive integers.
(a) Write down the value of a and the value of b.
(b) Work out the value of y when x = 90°.



4 $f(x) = -3x + 5$ and $g(x) = 4x^2 - 5$
(a) Find fg(x).
(b) Solve $fg(x) = -88$

5 Oscar changes £1000 into dollars at £1 = $1.15.
Oscar spends $630 and then changes the rest back into pounds at £1 = $1.25.
How many pounds does Oscar get back?

Day 350	S Tier 10-a-day
6 Prove algebraically that $(6n + 1)^2 - 1$ is a multiple of 6 for all integer values of n.	
7 The price of a television is decreased by x%. The new price is then increased by x%. The final price is 9% less than the original price. Work out the value of x.	
8 $f(x) = \frac{-5x + 1}{2x + 5}$ where $x \neq -\frac{5}{2}$ (a) Show that $ff(x) = x$. (b) Write down $f^{-1}(x)$.	
9 P is directly proportional to the square of v and inversely proportional to t. When v = 1 and t = 3, P = 2. Work out the value of P when v = 6 and t = 4.	
10 a = 27.1 and b = 9.02, both correct to 3 significant figures. Work out a ÷ b. Write down your answer to a suitable degree of accuracy. You must show your working and give a reason for your answer. (Calculator)	