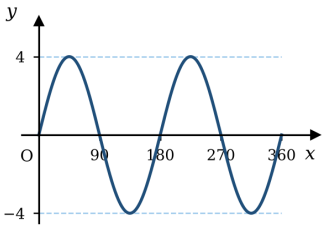
Day 345	S Tier 10-a-day

1 $x : y = 5 : 4$
Work out the ratio $(6x - 6y) : (2x + 2y)$
Give your answer in its simplest form.

2 Solve $-3 \cos x° + 7 = 10$ for $0 \leq x \leq 360$

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 $x = 75°$.



4 Callum changes £300 into euros at £1 = €1.2.
Callum spends €140 and then changes the rest back into pounds at £1 = €1.25.
How many pounds does Callum get back?

5 a = 35 and b = 16,
both correct to the nearest whole number.
Work out the lower bound of $a \div b$.
Give your answer correct to 3 significant figures.

Day 345	S Tier 10-a-day
6 The interior angles of a pentagon are $x°$, $(x - 25)°$, $(x + 10)°$, $(x + 40)°$, $(2x - 25)°$ (a) Work out the value of x. (b) Work out the size of the largest angle.	
7 A rectangle has length 10 cm and width 8 cm. Both measurements are correct to the nearest centimetre. Nia says that the perimeter of the rectangle could be exactly 38 cm. Is Nia correct? You must show your working.	
8 A is the point $(0, -6)$ and B is the point $(10, -2)$. Find an equation of the perpendicular bisector of AB. Give your answer in the form $y = mx + c$.	
9 Fatima and Kira share some money in the ratio 3 : 1. Fatima gives Kira £28. The ratio of their money is now 1 : 3. How much money do they have altogether?	
10 A cone is cut parallel to its base to make a smaller cone and a frustum. The frustum has height 9 cm, top radius 2 cm and base radius 4 cm. Work out the volume of the frustum. Give your answer in terms of π. 