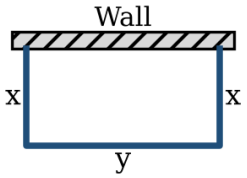
Day 267	IGCSE 10-a-day
1 The interior angles of a pentagon are $x°$, $(x + 30)°$, $(x + 40)°$, $(x + 15)°$, $(x + 5)°$ (a) Work out the value of x. (b) Work out the size of the largest angle.	
2 Find $\frac{dy}{dx}$ when $y = 4x^3 + 6x^2 - 7$	
3 Describe fully the single transformation that maps the graph of $y = f(x)$ onto the graph of (a) $y = f(x) - 5$ (b) $y = f(-x)$	
4 A curve has equation $y = 2x^3 - 6x - 2$. Find the equation of the tangent to the curve at the point where $x = -2$.	
5 A rectangle has length 11 cm and width 15 cm. Both measurements are correct to the nearest centimetre. Tom says that the area of the rectangle could be exactly 151 cm^2. Is Tom correct? You must show your working.	

Day 267 **IGCSE 10-a-day**

6 A farmer uses 112 m of fencing to enclose a rectangle against a wall, as shown.
(a) Show that the area, A m^2, is $A = 112x - 2x^2$.
(b) Find the maximum area, proving it is a maximum.



7 The table shows information about 103 children.
(a) A child who chooses tennis is chosen at random. Work out the probability that this child is a girl.
(b) Two of the 103 children are chosen at random. Work out the probability that both are girls.

	Tennis	Football	Swimming
Boys	27	9	8
Girls	18	22	19

8 30% of a town's people have been vaccinated. 9% of vaccinated people catch a virus and 3% of unvaccinated people catch it.
A person is chosen at random.
(a) Work out the probability that the person catches the virus.
(b) The person has caught the virus. Work out the probability that they were vaccinated.

9 A bag contains some counters. 8 of them are green and the rest are white.
Two counters are taken at random without replacement.
The probability that both are green is $\frac{28}{45}$.
Work out how many counters are white.

10 The line $y = -2x + k$ is a tangent to the curve $y = x^2 + 3x - 3$.
Find the value of k.