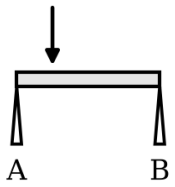
Day 346	A Level Maths: C Tier 10-a-day
1 Solve $-x - 7 < 12$.	
2 A cyclist moves in a straight line with constant acceleration 0.5 m s^{-2}. Its initial speed is 6 m s^{-1}. Find the distance travelled in 10 s.	
3 Solve $4 \tan x = 4$ for $0 \leq x \leq 2\pi$. Give your answers to 3 significant figures.	
4 Expand and simplify $(4 - \sqrt{2})(5 + \sqrt{2})$.	
5 X ~ B(19, 0.5). Find P(X < 10), giving your answer to 3 s.f.	

Day 346 **A Level Maths: C Tier 10-a-day**

6 A uniform beam AB of mass 10 kg and length 2 m rests horizontally on supports at A and B. A load of mass 20 kg is placed on the beam 0.5 m from A. Take g = 9.8 m s^{-2}. Find the reaction at B.



7 f(x) = 5 sin x + 12 cos x + 2.
Write f(x) in the form R sin(x + α) + 2, with α in degrees to 1 d.p., and state the maximum value of f(x).

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

9 $x_{n+1} = (4x_n + 7)^{\frac{1}{3}}$, with $x_0 = 2$.
Find x_1, x_2 and x_3 to 3 decimal places.

10 A stratified sample of size 13 is taken from 104 students: 72 Under 30, 32 30 to 50.
How many 30 to 50 should be in the sample?