Day 258	A Level Maths: C Tier 10-a-day
1 Solve $4 \ln x = 2$. Give your answer to 3 significant figures.	
2 A model relates the height, h cm, of a plant to the days, d, since planting by $h = 3 + 2d$. Interpret the value 3 in this context.	
3 A trunk of mass 2 kg is pulled along rough horizontal ground at constant speed by a horizontal force of 11.76 N. Take $g = 9.8$ m s^{-2}. Find the coefficient of friction between the trunk and ground.	
4 Solve $x^2 - 6x + 4 = 0$, giving your answers in the form $p \pm \sqrt{q}$.	
5 A cyclist starts from rest and accelerates uniformly at 2 m s^{-2} for 4 s, then travels at constant speed for a further 30 s. Find the total distance travelled.	

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6 The circle $(x - 2)^2 + (y - 2)^2 = 10$ passes through P(1, 5). Find the gradient of the tangent to the circle at P.	
7 The table summarises the number of goals scored in a game by 20 people. Goals, x: 0, 1, 2, 3, 4 Frequency, f: 3, 2, 7, 2, 6 Find the mean.	
8 Find $\int \cos(2x + 2)\, dx$.	
9 $f(x) = 4x - 6$ and $g(x) = 2x + 4$. Solve $fg(x) = 2$.	
10 Differentiate $y = \text{cosec } 4x$ with respect to x.	