Day 25	A Level Maths: C Tier 10-a-day
1 Solve $e^{5x + 1} = 5$. Give your answer to 3 significant figures.	
2 A car of mass 800 kg is driven along a straight horizontal road by a driving force of 600 N against a constant resistance of 400 N. Find the acceleration of the car.	
3 A circle has equation $x^2 + (y - 5)^2 = 25$. Write down the centre and the radius of the circle.	
4 Write down the exact values of (a) cosec 330° (b) cot 240°	
5 Solve $\|x + 3\| = \|x + 6\|$.	

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6 12 pairs of data on age of a car and its value have r = 0.44. Test, at the 5% significance level, for evidence of positive correlation. The critical value is 0.4973.	
7 A curve has parametric equations $x = 4t - 1$, $y = t^2 + 2$. The point P has y-coordinate 6 and positive t. Find the coordinates of P.	
8 Two forces $(2\mathbf{i} + 4\mathbf{j})$ N and $(4\mathbf{i} + 2\mathbf{j})$ N act on a particle of mass 3 kg. No other horizontal forces act. Find the acceleration of the particle as a vector in terms of **i** and **j**.	
9 The curve $y = ab^x$ passes through (0, 6) and (2, 150). Find the values of a and b.	
10 The table shows grouped data. Class: $20 \leq x < 25$; $25 \leq x < 30$; $30 \leq x < 35$; $35 \leq x < 40$ Frequency: 9, 7, 14, 11 Estimate the mean, to 3 s.f.	