Day 124	A Level Maths: C Tier 10-a-day
1 Write down the exact value of tan 60°.	
2 A car moving in a straight line increases its speed from 4 m s^{-1} to 29 m s^{-1} with constant acceleration 2.5 m s^{-2}. Find the time taken.	
3 A systematic sample of 11 customers is taken from a numbered list of 99. The first one selected is number 8. Find the number of the 7th one selected.	
4 Solve $\cos x = \frac{\sqrt{3}}{2}$ for $0° \leq x \leq 360°$.	
5 Use proof by exhaustion to show that $n^5 - n$ is divisible by 30 for every integer n with $1 \leq n \leq 4$.	

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6 The table shows grouped data. Class: $10 \leq x < 20$; $20 \leq x < 30$; $30 \leq x < 40$; $40 \leq x < 50$ Frequency: 15, 15, 4, 16 Estimate the median, to 3 s.f.	
7 Sketch $y = \frac{1}{x - 3} + 4$. Write down the equations of the asymptotes and the coordinates where the curve meets the axes.	
8 By writing 75° as 45° + 30°, find the exact value of tan 75°.	
9 Solve $x^2 - 8x + 2 = 0$, giving your answers in the form $p \pm \sqrt{q}$.	
10 A particle moves in a straight line with velocity $v = (9t^2 - 2t + 3)$ m s^{-1} at time t seconds. Find the distance travelled between t = 2 and t = 4 (the particle does not turn round).	