Day 217	A Level Maths: C Tier 10-a-day
1 A lorry moving in a straight line with constant acceleration increases its speed from 10 m s^{-1} to 14 m s^{-1} in 4 s. Find the distance it travels in this time.	
2 A sector has radius 8 cm and arc length 10.0 cm. Find the angle of the sector in radians and the area of the sector.	
3 Find the remainder when $2x^3 + 3x^2 - 7x + 7$ is divided by $(x - 2)$.	
4 In how many ways can a team of 2 be chosen from 8 players?	
5 A particle of mass 3 kg slides from rest down a smooth plane inclined at angle α to the horizontal, where $\sin\alpha = \frac{1}{2}$. Take g = 9.8 m s^{-2}. Find (a) its acceleration, (b) its speed after 3 s.	

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6 Express $\frac{8x + 28}{(x + 5)(x + 1)}$ in the form $\frac{A}{x + 5} + \frac{B}{x + 1}$. Find the values of A and B.	
7 A sequence is defined by $u_{n+1} = 3u_n + 7$, $u_1 = 5$. Find u_2, u_3 and u_4.	
8 A$(-2, -1)$, B$(10, 3)$ and C$(25, k)$. Given that A, B and C are collinear, find k.	
9 $P(A \cap B) = 0.54$ and $P(B) = 0.9$. Find $P(A \mid B)$.	
10 The circle $(x - 2)^2 + (y + 3)^2 = 169$ passes through P$(-3, -15)$. Find the gradient of the tangent to the circle at P.	