Day 16	A Level Maths: C Tier 10-a-day
1 For 8 values, $\Sigma x = 184$ and $\Sigma x^2 = 4344$. Find the mean and the standard deviation.	
2 M$(-7, -4)$ is the midpoint of the line segment AB. A is the point $(-3, -1)$. Find the coordinates of B.	
3 Solve $\tan x = 1.50$ for $0° \leq x \leq 360°$. Give your answers to 1 decimal place.	
4 A particle moves in a straight line. Its velocity at time t seconds is $v = (t^2 - 7t + 6)$ m s^{-1}. (a) Find the times when the particle is at rest. (b) Find its acceleration at the first of these times.	
5 Prove, by considering the possible remainders, that the square of any integer is of the form $5k$, $5k + 1$ or $5k + 4$.	

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6 Given that $dy/dx = 4x^2$ and $y = 0$ when $x = 0$, find y in terms of x.	
7 Solve $-x^2 + 2x < 0$.	
8 X is the number of the 7 members of one family who have the flu, which spreads easily. Can X be modelled by a binomial distribution? Give a reason.	
9 A particle slides down a rough plane inclined at angle α to the horizontal, where $\sin\alpha = \frac{4}{5}$ and the coefficient of friction is 0.25. Take $g = 9.8$ m s^{-2}. Find the acceleration.	
10 A curve has equation $y^2 = 2x + 7$. Find dy/dx in terms of x and y, and hence the gradient at (1, 3).	