Day 316	A Level Maths: C Tier 10-a-day
1 (a) Convert $\frac{3\pi}{2}$ radians to degrees. (b) Convert 15° to radians, giving your answer in terms of π.	
2 Find an equation of the line through A(−5, 5) and B(−1, −3), in the form ax + by + c = 0, where a, b and c are integers.	
3 Two forces of magnitudes 5 N and 12 N act on a small ring at right angles to each other. Find (a) the magnitude of the resultant, (b) the angle it makes with the 5 N force, to 1 d.p.	
4 Here are 7 values: 10, 3, 7, 18, 20, 5, 15 Find the mean and the standard deviation, to 3 s.f.	
5 A uniform rod AB of mass 8 kg and length 6 m is supported by a pivot 0.75 m from A. A particle of mass m kg is attached at A and the rod rests horizontally in equilibrium. Find m.	

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6 A curve has equation $x^2 + y^2 = 169$. Find dy/dx in terms of x and y, and hence the gradient at (−5, 12).	
7 The circle $(x - 2)^2 + (y + 3)^2 = 5$ passes through P(1, −1). Find the gradient of the tangent to the circle at P.	
8 A curve has parametric equations $x = 2t$, $y = 6t^2 + 1$. Find the gradient at the point where t = 1.	
9 M(−9, 0) is the midpoint of the line segment AB. A is the point (−5, 0). Find the coordinates of B.	
10 X ~ B(100, 0.3). Use a normal approximation to find $P(X \leq 28)$, to 3 s.f.	