Day 351	A Level Maths: C Tier 10-a-day
1 Find the set of values of x satisfying both $3x - 1 > 2$ and $x^2 - 4x - 5 < 0$.	
2 A particle of mass 2 kg has acceleration 1 m s^{-2}. Find the magnitude of the resultant force acting on it.	
3 In a histogram, the class 10 to 30 has frequency 60 and is drawn with a bar of height 6 cm. The class 30 to 35 has frequency 20. Find the height of its bar.	
4 The table shows values of y = f(x). x: 2 2.25 2.5 2.75 3 y: 5.1 9 8.5 5.8 8.3 Use the trapezium rule to estimate the area under the curve between x = 2 and x = 3.	
5 30 pairs of data on age of a car and its value have r = 0.16. Test, at the 5% significance level, for evidence of positive correlation. The critical value is 0.3061.	

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6 Solve $2^{3x+2} = 8$.	
7 Solve $\sin 3x = \frac{\sqrt{2}}{2}$ for $0° \leq x \leq 120°$.	
8 A stone is dropped from rest from the top of a cliff of height 122.5 m. Take $g = 9.8$ m s^{-2} and ignore air resistance. Find (a) the time taken to reach the ground, (b) its speed on hitting the ground.	
9 Use the product rule to differentiate $y = x^1e^{3x}$.	
10 Express $\frac{2x+7}{(x-2)^2}$ in the form $\frac{A}{(x-2)} + \frac{B}{(x-2)^2}$.	