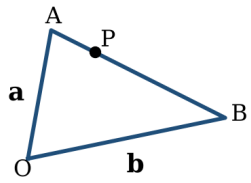
Day 103	A Level Maths: C Tier 10-a-day
1 The table shows values of y = f(x). x: 2 2.25 2.5 2.75 3 3.25 y: 7.2 8.1 5 5.9 7.3 7.7 Use the trapezium rule to estimate the area under the curve between x = 2 and x = 3.25.	
2 The number of events in one interval has a Poisson distribution with mean 0.5. Find the probability of at least 1 in one such interval, to 3 s.f.	
3 A cyclist travelling at 24 m s^{-1} brakes uniformly and comes to rest after travelling 96 m. (a) Find the deceleration. (b) Find the time taken to stop.	
4 A sequence is defined by $u_{n+2} = u_{n+1} + u_n$, with $u_1 = 2$ and $u_2 = 2$. Find u_6.	
5 The table shows grouped data. Class: $0 \leq x < 5$; $5 \leq x < 10$; $10 \leq x < 15$; $15 \leq x < 20$ Frequency: 3, 7, 14, 6 Estimate the median, to 3 s.f.	

Day 103	A Level Maths: C Tier 10-a-day
6 Water fills a tank with a square base of side 10 m. The depth h m increases at 0.2 m/min. Find the rate of increase of volume.	
7 A circle has equation $x^2 + (y + 2)^2 = 49$. Determine whether the point P(−7, −2) is inside, outside or on the circle.	
8 In the diagram, OA = **a**, OB = **b**, and P lies on AB with AP : PB = 1 : 3. Find AB and AP in terms of **a** and **b**. 	
9 A circle has centre (0, −4) and passes through the point (1, −6). Find the equation of the circle.	
10 A train's engine works at a constant rate of 15 kW. Find the driving force when the vehicle is moving at 15 m s^{-1}.	