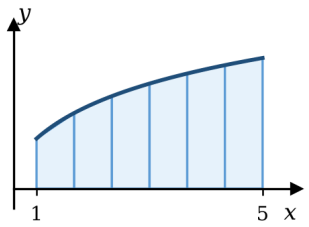
Day 320	A Level Maths: C Tier 10-a-day

1 A particle of mass 40 kg has acceleration 0.5 m s^{-2}. Find the magnitude of the resultant force acting on it.

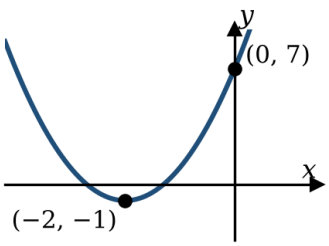
2 An interviewer outside a college must talk to 10 men and 25 women, and stops people until each target is met.
Name the sampling method used.

3 M(2, 6) is the midpoint of the line segment AB. A is the point (−2, 3). Find the coordinates of B.

4 The diagram shows the curve y = ln x + 1 from x = 1 to x = 5 divided into 6 strips of equal width.
Use the trapezium rule with these strips to estimate the shaded area to 3 s.f.



5 The diagram shows a sketch of a quadratic curve.
Find its equation in the form $y = a(x - p)^2 + q$.



Day 320 **A Level Maths: C Tier 10-a-day**

6 Each customer buys a coffee with probability 0.1.
Find the probability that at least one of 7 customers buys a coffee, to 3 s.f.

7 $\frac{-4x-11}{(x+2)(x+3)} \equiv \frac{A}{x+2} + \frac{B}{x+3}$.
Find A and B, and hence find $\int \frac{-4x-11}{(x+2)(x+3)}\,dx$.

8 The line $y = 4x + k$ is a tangent to the curve $y = x^2 + 6x + 4$.
Find the value of k.

9 Use the trapezium rule with 4 strips to estimate
$\int_0^1 e^{x^2}\,dx$,
giving your answer to 3 significant figures.

10 The graph shows the velocity of a cyclist over 35 seconds as it moves in a straight line.
(a) Find its acceleration in the first 10 s.
(b) Find the total distance travelled.

