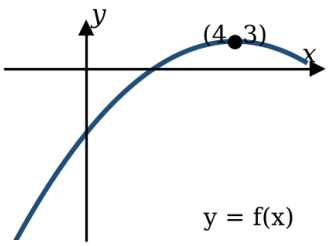
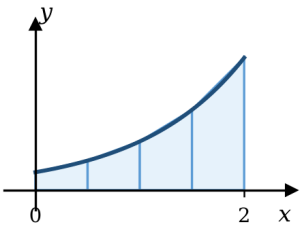
Day 115 **A Level Maths: C Tier 10-a-day**

1 The mean of 30 ages of the men is 58. The mean of 45 ages of the women is 64.
Find the mean of all 75 values.

2 The diagram shows the curve y = f(x). The maximum point is shown. Write down the coordinates of the maximum point on the curve with equation
(a) y = f(2x) (b) y = f(x) + 1



3 The diagram shows the curve $y = e^x$ from x = 0 to x = 2 divided into 4 strips of equal width.
Use the trapezium rule with these strips to estimate the shaded area to 3 s.f.



4 A particle has initial velocity $(\mathbf{i} - 4\mathbf{j})$ m s^{-1} and constant acceleration $(-\mathbf{i} - \mathbf{j})$ m s^{-2}.
Find its velocity after 2 s.

5 Find the equation of the normal to the curve $y = 4 \ln x + x$ at the point where x = 1.

Day 115	A Level Maths: C Tier 10-a-day
6 A train starts from rest and accelerates uniformly at 4 m s^{-2} for 8 s, then travels at constant speed for a further 30 s. Find the total distance travelled.	
7 Solve $\|x + 9\| = 9$.	
8 θ is small and measured in radians. Use the small angle approximations to find an approximation for $\sin 2\theta \tan \theta$.	
9 Solve $x^{\frac{4}{3}} = 81$.	
10 X has probability density function $f(x) = \frac{3}{8}x^2$ for $0 \leq x \leq 2$, and 0 otherwise. Find E(X).	