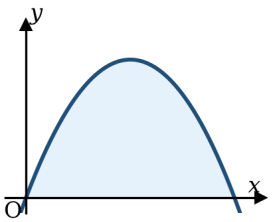
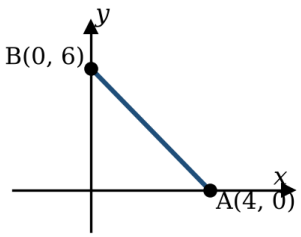
Day 180 **A Level Maths: C Tier 10-a-day**

1 Solve $2x - 7 < -4x + 6$.

2 The diagram shows the curve $y = 3x(8 - x)$.
Find the area of the shaded region, between the curve and the x-axis.



3 The diagram shows a line meeting the axes at A and B.
Find (a) the equation of AB in the form $px + qy = r$ with integers p, q and r, (b) the length AB.



4 How many different arrangements are there of the letters of the word COFFEE?

5 Find the sum of the first 5 terms of the geometric series $6 + 18 + 54 + ...$

Day 180	A Level Maths: C Tier 10-a-day
6 A block of mass 5 kg is pulled along rough horizontal ground by a horizontal force of 27 N. The coefficient of friction is 0.5. Take g = 9.8 m s^{-2}. Find the acceleration.	
7 A curve has equation $y^2 = x + 8$. Find dy/dx in terms of x and y, and hence the gradient at (1, 3).	
8 A ball is projected from level ground with velocity $(12\mathbf{i} + 19.6\mathbf{j})$ m s^{-1} ($\mathbf{i}$ horizontal, $\mathbf{j}$ vertically up). Take g = 9.8 m s^{-2}. (a) Find the time of flight. (b) Find the horizontal range.	
9 The table shows grouped data. Class: $20 \leq x < 25$; $25 \leq x < 30$; $30 \leq x < 35$; $35 \leq x < 40$ Frequency: 7, 9, 4, 12 Estimate the mean, to 3 s.f.	
10 $\frac{5x + 11}{(x + 1)(x + 3)} \equiv \frac{A}{x + 1} + \frac{B}{x + 3}$. Find A and B, and hence find $\int \frac{5x + 11}{(x + 1)(x + 3)}\,dx$.	