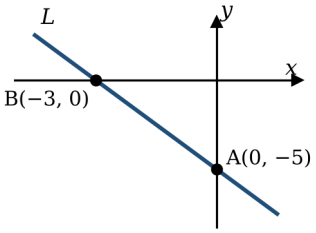
Day 246	IGCSE 10-a-day
1 $f(x) = \frac{3x + 6}{5}$. (a) Find $f^{-1}(x)$. (b) Find $f^{-1}(3)$.	
2 Write these numbers in order of size, starting with the smallest. 0.83, $\frac{3}{4}$, $\frac{8}{11}$, 63%	
3 A sector of a circle has radius 4 cm and angle 45°. (a) Work out the length of the arc of the sector. (b) Work out the area of the sector. Give each answer in terms of π.	
4 $\mathbf{OA} = 3\mathbf{b}$, $\mathbf{OB} = -6\mathbf{a} + \mathbf{b}$ and $\mathbf{OC} = -15\mathbf{a} - 2\mathbf{b}$. Show that A, B and C lie on a straight line.	
5 A particle P moves in a straight line. After t seconds, its displacement from a fixed point O is s metres, where $s = t^3 - 9t^2 + 24t + 2$ $(t \geq 0)$ Find the acceleration of P at each instant when it is at rest.	

Day 246 **IGCSE 10-a-day**

6 The diagram shows the straight line L, which passes through the points A and B.
The line M is perpendicular to L and passes through B.
Find the equation of M in the form y = mx + c.



7 The point P(5, 3) is reflected in the x-axis.
The image is then reflected in the line y = x.
(a) Write down the coordinates of the final image of P.
(b) Describe fully the single transformation that is equivalent to these two transformations.

8 $y = x(x - 4)(2x + 1)$
Work out the gradient of the curve at the point where $x = -2$.

9 A bag contains some sweets. 6 of them are red and the rest are yellow.
Two sweets are taken at random without replacement.
The probability that both are red is $\frac{15}{28}$.
Work out how many sweets are yellow.

10 The tangents at two points A and B on the curve $y = 2x^3 - 9x^2 + 5x + 4$ are parallel to the line $2y - 10x = 8$.
Find the coordinates of A and B.