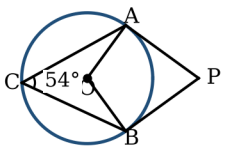
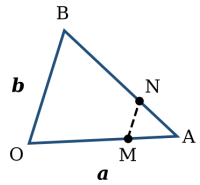
Day 31	S Tier 10-a-day
1 $f(x) = \frac{8}{x-4} + 2$ (a) Find $f^{-1}(x)$. (b) Find the value of $f^{-1}(-6)$.	
2 The mean of 6 numbers is 129. One number is removed and the mean of the remaining 5 numbers is 146.8. Work out the number that was removed.	
3 Work out $(\frac{64}{125})^{\frac{7}{3}}$	
4 Priya invested £9,500 in a savings account for 2 years. Compound interest was paid at a fixed rate per year. At the end of the 2 years the account held £10,674.20. Work out the annual rate of interest. (Calculator)	
5 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle ACB = 54°. (a) Work out the size of angle AOB. (b) Work out the size of angle APB. The diagram is not drawn accurately. 	

Day 31	S Tier 10-a-day
6 Ivan invests £6,000. The account pays compound interest of 4% a year for the first 3 years, then 2.5% a year for the next 2 years. Work out the total amount after 5 years, to the nearest penny. (Calculator)	
7 The sum of the squares of two consecutive positive integers is 85. Let the smaller integer be n. (a) Show that $n^2 + n - 42 = 0$ (b) Work out the two integers.	
8 OAB is a triangle. OA = **a** and OB = **b**. M is on OA with OM : MA = 2 : 1. N is on AB with AN : NB = 1 : 2. (a) Find ON in terms of **a** and **b**. (b) Show that MN is parallel to OB. The diagram is not drawn accurately. 	
9 The HCF of two numbers is 3 and their LCM is 72. The smaller number is 9. Work out the larger number.	
10 ABCD is a rectangle with AB = 8 cm and AD = 13 cm. A point P inside the rectangle is such that AP ≤ 8 cm and P is nearer to A than to B. Work out the area of the region in which P can lie. Give your answer in terms of π and surds.	