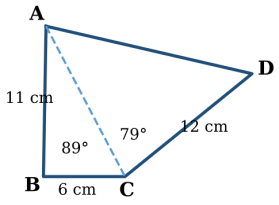
Day 312	IGCSE 10-a-day
1 $f(x) = \frac{6}{x+1}$. (a) State the largest possible domain of f. (b) State the range of f for this domain.	
2 $y = -8\sqrt{x} - \frac{8}{\sqrt{x}}$ Find $\frac{dy}{dx}$. Give each term of your answer in the form ax^n.	
3 Solve $\frac{x+3}{3} - \frac{x-3}{5} = 2$	
4 Rationalise the denominator of $\frac{11}{4\sqrt{6}}$ Give your answer in its simplest form.	
5 A solid metal sphere of radius 6 cm is melted down and recast into a solid cylinder of radius 3 cm. Work out the height of the cylinder. The volume of a sphere of radius r is $\frac{4}{3}\pi r^3$.	

Day 312	IGCSE 10-a-day
6 Lena invests £6,000. The account pays compound interest of 6% a year for the first 3 years, then 2.5% a year for the next 3 years. Work out the total amount after 6 years, to the nearest penny. (Calculator)	
7 In a coach, the ratio of the number of adults to the number of children is 7 : 8. Then 2 adults are removed and 8 more children are added. The ratio is now 4 : 5. How many adults were there at the start?	
8 $y = x^4 + 4x$ Find the coordinates of the stationary point and determine its nature.	
9 In quadrilateral ABCD, AB = 11 cm, BC = 6 cm, CD = 12 cm, angle ABC = 89° and angle ACD = 79°. Work out the area of ABCD. Give your answer correct to 3 significant figures. (Calculator) 	
10 A curve has equation $y = x^3 + 4x^2 + 6x + 3$. The tangent to the curve at the point A, where $x = -3$, meets the curve again at the point B. Find the coordinates of B.	