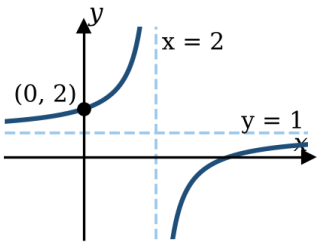
Day 15	A Level Maths: C Tier 10-a-day
1 A model relates the value, £V, of a car to its age, t years by V = 9000 − 1100t. Interpret the value 1100 in this context.	
2 A circle has centre (4, 0) and passes through the point (7, 4). Find the equation of the circle.	
3 Here are 7 values: 9, 29, 48, 50, 6, 77, 67 Find the median and the interquartile range.	
4 A block of mass 2 kg is pulled along rough horizontal ground by a horizontal force of 8.9 N. The coefficient of friction is 0.25. Take g = 9.8 m s^{-2}. Find the acceleration.	
5 Use the quotient rule to find the derivative of $y = \frac{\cos x}{x}$.	

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6 The diagram shows the graph of $y = \frac{k}{x - a} + c$ with its asymptotes. Find the values of a, c and k.



7 Solve $2\sin^2 x - \sin x - 1 = 0$ for $0° \leq x \leq 360°$.

8 An arithmetic series has first term 2 and common difference 5. Find the smallest n for which the sum of the first n terms exceeds 400.

9 Two cyclists start at the same time from points X and Y, 50 m apart, and cycle directly towards each other at constant speeds of 4 m s^{-1} and 6 m s^{-1}. Find the time until they meet.

10 Solve (a) $e^x = 7$ (b) $\ln x = 0.5$
Give answers to 3 significant figures.