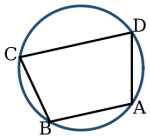
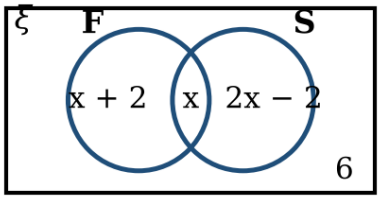
Day 362	S Tier 10-a-day
1 ABC is an isosceles triangle with AB = AC. Angle BAC = (5x + 5)° Angle ABC = (3x − 39)° (a) Work out the value of x. (b) Work out the size of angle BAC.	
2 The mean of 9 numbers is 197. A new number is added and the mean of all 10 numbers is 177.7. Work out the new number.	
3 Work out $(\frac{125}{64})^{-\frac{2}{3}}$	
4 A, B, C and D are points on a circle. Angle DAB = (2x + 5)°, angle BCD = (5x + 7)° and angle ABC = (3x + 10)°. (a) Work out the value of x. (b) Work out the size of angle ADC. The diagram is not drawn accurately. 	
5 Use the iteration formula $x_{n+1} = 2 + \frac{9}{x_n}$ with $x_0 = 2$ (Calculator) to work out x_1, x_2 and x_3. Give each answer correct to 3 decimal places.	

Day 362	S Tier 10-a-day
6 E is directly proportional to v. When v = 1, E = 8. (a) Find a formula for E in terms of v. (b) Work out the value of E when v = 5.	
7 A rectangle has area $(16 + 7\sqrt{5})$ cm^2 and length $(3 + 2\sqrt{5})$ cm. Find the width of the rectangle. Give your answer in the form $a + b\sqrt{5}$	
8 The Venn diagram shows how many of 34 students study French (F) or Spanish (S). (a) Work out the value of x. (b) A student is chosen at random from those who study Spanish. Work out the probability that this student also studies French. 	
9 Make l the subject of $T = \frac{5}{\sqrt{l}}$	
10 Expand and simplify $(1 - 2\sqrt{3})^2$ Give your answer in the form $p + q\sqrt{3}$	