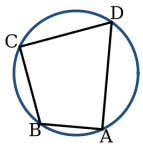
Day 204	S Tier 10-a-day
1 The mean of 9 numbers is 52. A new number is added and the mean of all 10 numbers is 47.8. Work out the new number.	
2 Solve $12x^2 + 28 = 37x$	
3 A, B, C and D are points on a circle. Angle DAB = (x + 30)°, angle BCD = (3x + 38)° and angle ABC = (3x − 25)°. (a) Work out the value of x. (b) Work out the size of angle ADC. The diagram is not drawn accurately. 	
4 Solve the simultaneous equations x + 4y = 27 −5x + 6y = 21	
5 Hassan sets off at 9:00 and cycles at 8 km/h along a path. Amir sets off from the same place at 9:45 and cycles at 16 km/h along the same path. At what time does Amir catch up with Hassan?	

Day 204	S Tier 10-a-day
6 The number of members of a club is decreased by 20% in one year. The next year the number of members is decreased by 25%. There are now 720 members. How many members were there to begin with?	
7 The graph of y = f(x) has a minimum point at (1, −3). Write down the coordinates of the turning point of the graph of (a) y = f(x − 3) (b) y = f(2x) − 2	
8 Triangle P has vertices A(2, 2), B(3, 0) and C(2, 3). Triangle Q has vertices A'(−2, 10), B'(−5, 16) and C'(−2, 7). Q is an enlargement of P. Describe fully the single transformation that maps P onto Q.	
9 Show that the line y = 2x + 15 is a tangent to the circle $x^2 + y^2 = 45$. Find the coordinates of the point where the line touches the circle.	
10 Show that $\sqrt{79 + 30\sqrt{6}} = 5 + 3\sqrt{6}$	