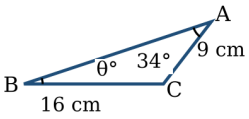
Day 260	S Tier 10-a-day

1 Hire Shop A has a delivery charge of £5.50 plus £6 per day.
Hire Shop B has a delivery charge of £25.50 plus £4 per day.
(a) Work out the number of days for which the two costs are the same.
(b) Which is cheaper for 19 days, and by how much?

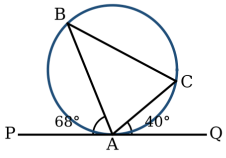
2 80 fish in a lake are caught, tagged and put back.
Later, a second sample of 60 fish is caught. 4 of these are tagged.
(a) Work out an estimate for the number of fish in a lake.
(b) State one assumption you have made.

3 The diagram shows triangle ABC. (Calculator)
Angle BAC = 34° and angle ABC is acute.
Work out the size of angle ABC, marked θ.
Give your answer correct to 1 decimal place.
The diagram is not drawn accurately.



4 Work out $81^{\frac{7}{4}}$

5 PAQ is a tangent to the circle at A. B and C are points on the circle. Angle PAB = 68° and angle CAQ = 40°.
(a) Work out the size of angle ABC.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



Day 260	S Tier 10-a-day
6 Prove that $(k + 4)^2 - (k - 4)^2$ is a multiple of 16 for all integer values of k.	
7 How many factors does 288 have? Include 1 and 288.	
8 Callum and Uma share some money in the ratio 5 : 8. Callum gives Uma £2. The ratio of their money is now 3 : 5. How much money do they have altogether?	
9 Solve the simultaneous equations $y = x^2 + 3x + 5$ $y = -4x - 7$	
10 a = 0.389 and b = 5.74, both correct to 3 significant figures. Work out a × b. Write down your answer to a suitable degree of accuracy. You must show your working and give a reason for your answer. (Calculator)	