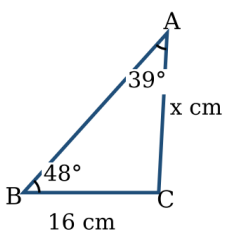
Day 346	S Tier 10-a-day
1 The ratio of juniors to seniors in a school is 1 : 2. 85% of the juniors and 40% of the seniors play a sport. What percentage of all of these students play a sport?	
2 Work out $(5\sqrt{3})^2 - (2\sqrt{3})^2$	
3 Hire Shop A has a delivery charge of £1.50 plus £6 per day. Hire Shop B has a delivery charge of £22.50 plus £2.50 per day. (a) Work out the number of days for which the two costs are the same. (b) Which is cheaper for 14 days, and by how much?	
4 10 painters can paint a hall in 18 days. After 6 days, 2 of the painters leave. The rest carry on working at the same rate. How many more days does it take to finish?	
5 The diagram shows triangle ABC. (Calculator) Work out the length of AC. Give your answer correct to 1 decimal place. The diagram is not drawn accurately. 	

Day 346	S Tier 10-a-day
6 Use the iteration formula $x_{n+1} = \sqrt{5x_n + 14}$ with $x_0 = 3$ (Calculator) to work out x_1, x_2 and x_3. Give each answer correct to 3 decimal places.	
7 A library has 2×10^4 books. Each book has 8.8×10^4 words. Work out the total number of words in all the books. Give your answer in standard form.	
8 Solve the simultaneous equations $x^2 + y^2 = 74$ $y = -x + 2$	
9 A bag contains some sweets. 9 of them are red and the rest are yellow. Two sweets are taken at random without replacement. The probability that both are red is $\frac{6}{11}$. Work out how many sweets are yellow.	
10 A point A is on level ground in line with the base of a tower. (Calculator) The angle of elevation of the top of the tower from A is 39°. B is a point on the same line, 80 m further from the tower than A. The angle of elevation of the top of the tower from B is 16°. Work out the height of the tower. Give your answer to 1 decimal place.	