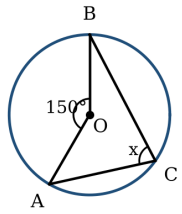
Day 232	A Tier 10-a-day
1 A circle has a radius of 13 cm, correct to the nearest cm. (Calculator) Work out the lower bound for the area of the circle. Give your answer to 3 significant figures.	
2 Express 2475 as a product of prime factors. Give your answer in index form.	
3 A rectangle has width x cm and length (x + 4) cm. The area of the rectangle is 32 cm^2. (a) Show that $x^2 + 4x - 32 = 0$ (b) Work out the value of x.	
4 In a sale, all prices are reduced by 5%. A tent costs £285 in the sale. Work out the original price of the tent.	
5 (a) Factorise $4y^2 - 25z^2$ (b) Use the same idea to work out $108^2 - 92^2$ without a calculator.	

Day 232 **A Tier 10-a-day**

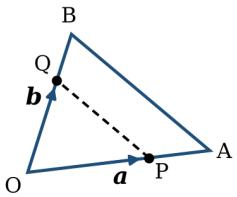
6 A, B and C are points on a circle with centre O.
Angle AOB = 150°.
Work out the size of angle x.
Give a reason for your answer.



7 Kiran buys a sofa for £200 and sells it making a profit of 15%.
Work out the selling price.

8 A bag contains 7 black pens and 3 blue pens.
Three pens are taken at random without replacement.
Work out the probability that at least one of the three pens is blue.

9 OAB is a triangle. $\overrightarrow{OA} = \mathbf{a}$ and $\overrightarrow{OB} = \mathbf{b}$.
P is on OA with OP : PA = 2 : 1.
Q is on OB with OQ : QB = 2 : 1.
(a) Find $\overrightarrow{PQ}$ in terms of **a** and **b**.
(b) What do you notice about PQ and AB?



10 A cyclist travels 790 metres in 5.2 seconds. The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second.
(a) Work out the upper bound and the lower bound of the speed in m/s.
(b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.