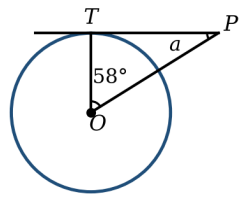
Day 220	B Tier 10-a-day
1 Simplify $2x + 9y - 5x + 4y$	
2 $\mathbf{a} = \begin{pmatrix} -5 \\ -2 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} 2 \\ 6 \end{pmatrix}$ Work out (a) $2\mathbf{a} - \mathbf{b}$ (b) $2\mathbf{a} - 3\mathbf{b}$	
3 Write 5428.2671 (a) correct to 2 decimal places, (b) correct to 3 significant figures.	
4 The probability that Dev wins a game of chess is 0.6. Work out the probability that Dev does not win a game of chess.	
5 The first term of a sequence is 4. The term-to-term rule is: multiply by 3 and then add 6. Work out the 4th term.	

Day 220 **B Tier 10-a-day**

6 The diagram shows a circle, centre O.
PT is a tangent to the circle at T.
Angle TOP = 58°.
Work out the size of angle a.
Give a reason for each step of your working.
The diagram is not drawn accurately.



7 The number x is rounded to the nearest 100.
The result is 5500.
Write down the error interval for x.

8 Expand and simplify $(2x - 1)^2$

9 In a room, the ratio of cats to dogs is 3 : 5.
There are 20 dogs.
More cats join so that there are equal numbers of cats and dogs.
How many cats join?

10 The diagram shows the shape of a patio.
All the corners are right angles. All lengths are in m.
(a) Find the perimeter.
(b) Find the area.

