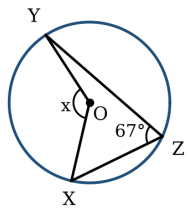
Day 136 **A Tier 10-a-day**

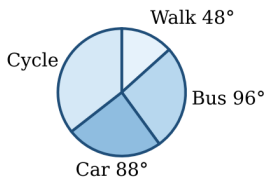
1 Solve $-x - 3 > 3x + 13$

2 X, Y and Z are points on a circle with centre O.
Angle XZY = 67°.
Work out the size of angle x.
Give a reason for your answer.



3 A watch costs £408 including VAT at 20%.
(Calculator)
Work out the price of the watch before VAT is added.

4 The pie chart shows how some students travel to school.
11 students chose car.
(a) Work out the angle for cycle.
(b) How many students chose cycle?



5 $\mathbf{a} = \begin{pmatrix} 2 \\ -2 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 5 \\ -4 \end{pmatrix}$.
Work out $4\mathbf{a} - 2\mathbf{b}$.

Day 136	A Tier 10-a-day
6 A bag contains 7 red and 2 blue counters. Two counters are taken at random without replacement. Work out the probability that the two counters are the same colour.	
7 $x_{n+1} = \sqrt[3]{22 - 3x_n}$ $x_0 = 3$ Work out the values of x_1, x_2 and x_3. Give your answers correct to 3 decimal places. (Calculator)	
8 n is the smallest positive integer such that 288 × n is a cube number. Find the value of n.	
9 A cyclist travels 700 metres in 5.3 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.	
10 A bag contains 3 black pens and 6 blue pens. Three pens are taken at random without replacement. Work out the probability that all three pens are black.	