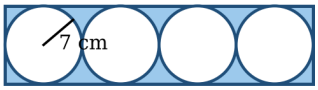
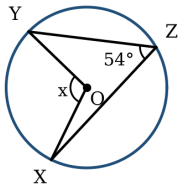
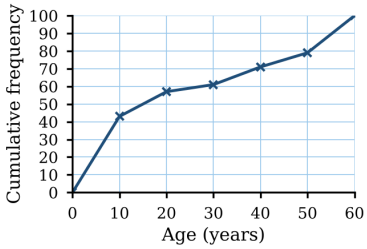
Day 160	A Tier 10-a-day
1 Simplify fully (a) $\frac{6x^2y^2}{3xy^6}$ (b) $(3x^3y^3)^2$	
2 The scale of a map is 1 : 20000. Two towns are 2 cm apart on the map. Work out the real distance between the towns in kilometres.	
3 4 identical circles of radius 7 cm fit exactly inside a rectangle. The circles touch each other and the sides of the rectangle. (Calculator) Work out the area of the shaded region. Give your answer to 3 significant figures. 	
4 Factorise $10x^2 - 7x - 6$	
5 A house is worth £250000. (Calculator) Its value increases by 12% each year. Work out its value after 4 years., to the nearest pound.	

Day 160 **A Tier 10-a-day**

6 X, Y and Z are points on a circle with centre O.
Angle XZY = 54°.
Work out the size of angle x.
Give a reason for your answer.



7 The cumulative frequency graph shows information about the age of 100 visitors.
Use the graph to find an estimate for
(a) the median,
(b) the number of visitors with a age greater than 10 years.



8 (a) Show that $0.\dot{7}\dot{5} = \frac{25}{33}$

(b) Hence write $2.\dot{7}\dot{5}$ as a mixed number in its simplest form.

9 (a) Simplify $\sqrt{108}$
(b) Simplify $\sqrt{3} \times \sqrt{27}$

10 A regular decagon and a regular dodecagon share the side AB and are on opposite sides of it.
The two shapes meet at the point A.
Work out the size of the angle at A that is not inside either shape.