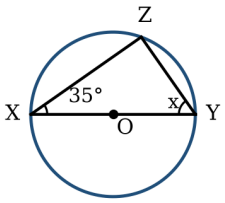
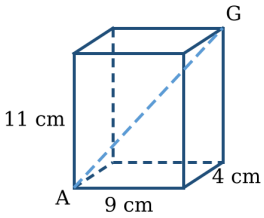
Day 78	A Tier 10-a-day
1 y is directly proportional to the cube of x. When x = 4, y = 192. (a) Find a formula for y in terms of x. (b) Work out the value of y when x = 5.	
2 Work out the value of (a) $216^{\frac{1}{3}}$ (b) 3^{-2}	
3 XY is a diameter of the circle. Angle YXZ = 35°. Work out the size of angle x. Give a reason for each step of your working. 	
4 (a) Solve $-9 < 4x + 3 < 3$ (b) Write down all the integer values of x that satisfy this inequality.	
5 A laptop costs £500 plus VAT at 20%. In a sale, the price including VAT is reduced by 20%. Work out the sale price of the laptop.	

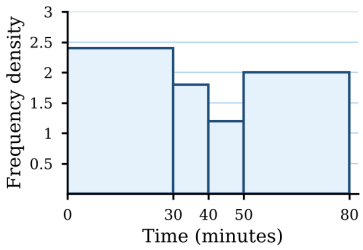
Day 78 **A Tier 10-a-day**

6 Femi reads $\frac{3}{4}$ of a book and has now read 39 pages.
How many pages does the whole book have?

7 The diagram shows a cuboid.
Work out the length of the diagonal AG.
(Calculator)
Give your answer to 3 significant figures.
The diagram is not drawn accurately.



8 The histogram shows information about the time of some items.
(a) Work out the number of items with a time in the class 40 to 50 minutes.
(b) Work out an estimate for the number with a time greater than 35 minutes.



9 A cyclist travels 300 metres in 14.3 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 solid hemisphere has radius 6 cm.
Work out its volume. Give your answer in terms of π.