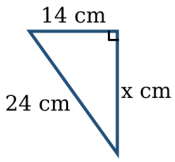
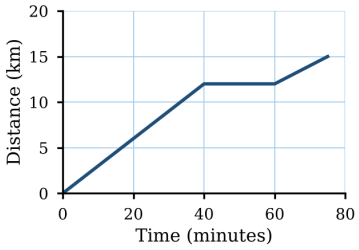
Day 137	A Tier 10-a-day
1 Factorise fully $4x^2 - 32x + 48$	
2 The exchange rate is £1 = $1.25. (Calculator) Femi changes £600 into US dollars. How much does Femi get in US dollars?	
3 A scientist wants to estimate the number of frogs in a pond. She catches 60 frogs, marks each one and returns them. Later she catches a second sample of 60 frogs. 9 of these are marked. Work out an estimate for the total number of frogs in a pond.	
4 Work out the length of x. (Calculator) Give your answer to 3 significant figures. The diagram is not drawn accurately. 	
5 $A = 2^3 \times 5^2 \times 7^4$ $B = 2 \times 5^2$ Find the highest common factor (HCF) and the lowest common multiple (LCM) of A and B. Give your answers as products of prime factors.	

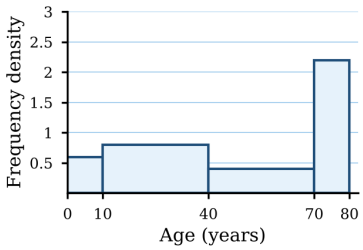
Day 137 **A Tier 10-a-day**

6 The graph shows the distance travelled by a cyclist.
(a) For how many minutes did the cyclist stop?
(b) Work out the speed during the final part of the journey. Give your answer in km/h.



7 Show that $\frac{\sqrt{175}-\sqrt{112}}{\sqrt{7}}$ is an integer, and find its value.

8 The histogram shows information about the age of some items.
(a) Work out the number of items with a age in the class 0 to 10 years.
(b) Work out an estimate for the number with a age greater than 25 years.



9 Solve the simultaneous equations
$x^2 + y^2 = 169$
$y = x + 7$

10 C is the point (3, 1) and D is the point (0, 5).
(a) Find the midpoint of CD.
(b) Work out the length of CD. Give your answer as a whole number.