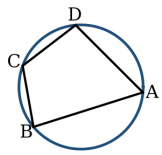
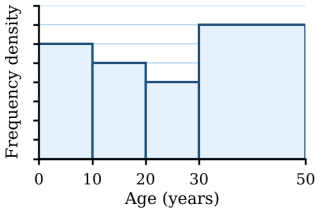
Day 82	S Tier 10-a-day
1 Maya and Nadia live 290 km apart. At 10:00 they set off towards each other on the same road. Maya drives at 85 km/h and Nadia drives at 60 km/h. (a) At what time do they meet? (b) How far from Maya's home do they meet?	
2 Solve $5^x = 25^{x+2}$	
3 A, B, C and D are points on a circle. Angle DAB = (3x + 30)°, angle BCD = (2x + 25)° and angle ABC = (3x − 5)°. (a) Work out the value of x. (b) Work out the size of angle ADC. The diagram is not drawn accurately. 	
4 A bag contains balloons. $\frac{3}{8}$ of the balloons are pink and $\frac{1}{5}$ of the balloons are silver. The rest of the balloons, 51 of them, are gold. How many pink balloons are there?	
5 Solve $x^2 \geq 4$	

Day 82	S Tier 10-a-day

6 a = 0.79 and b = 0.28,
both correct to 2 decimal places.
Work out the upper bound of a ÷ b.
Give your answer correct to 3 significant figures.

7 Work out the exact value of cos 45° + sin 30°
Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.

8 The histogram shows the ages of visitors to a museum.
50 of them had an age between 10 and 20 years.
(a) How many had an age between 20 and 30 years?
(b) How many visitors are there in total?



9 A rectangle has area $(4 + 2\sqrt{2})$ cm^2 and length $(3 + 2\sqrt{2})$ cm.
Find the width of the rectangle.
Give your answer in the form $a + b\sqrt{2}$

10 OAB is a triangle. OA = **a** and OB = **b**.
M is on OA with OM : MA = 3 : 1. N is on OB with ON : NB = 1 : 2. AN and BM intersect at X.
(a) Find BM in terms of **a** and **b**.
(b) Find OX in terms of **a** and **b**.
The diagram is not drawn accurately.

