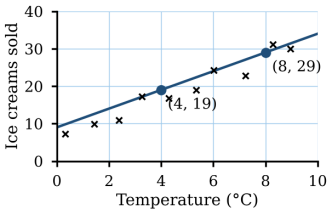
Day 223 **S Tier 10-a-day**

1 A flight leaves London at 07:45 (London time).
It takes 7 hours 35 minutes.
When it is 12:00 in London it is 04:00 in Los Angeles.
At what time, in Los Angeles time, does the flight land? Say if it is on a different day.

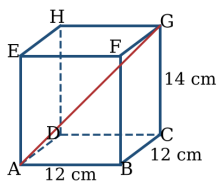
2 The curve $y = x^2 - 10x + 16$ crosses the x-axis at the points A and B.
(a) Find the coordinates of A and B.
(b) Find the coordinates of the minimum point of the curve.

3 Write $0.79\dot{2}$ as a fraction in its simplest form.

4 The scatter graph shows temperature (x) and ice creams sold (y).
The equation of the line of best fit is $y = 2.5x + 9$.
(a) Estimate y when x = 9.
(b) Explain why an estimate of y when x = 20 may be unreliable.



5 The diagram shows a cuboid ABCDEFGH.
(Calculator)
(a) Work out the length of the diagonal AG.
(b) Work out the angle between AG and the base ABCD, to 1 decimal place.
The diagram is not drawn accurately.



Day 223	S Tier 10-a-day
6 Use the iteration formula $x_{n+1} = \sqrt[3]{2x_n + 7}$ with $x_0 = 4$ (Calculator) to work out x_1, x_2 and x_3. Give each answer correct to 3 decimal places.	
7 T is inversely proportional to the cube of n. When n = 1, T = 64. Find the positive value of n when T = 1.	
8 A circle has centre C(2, −3) and passes through the point P(1, −4). Find an equation of the circle.	
9 A and B are two events. P(A) = 0.5, P(B) = 0.6 and P(A or B) = 0.95 (a) Work out P(A and B). (b) Are A and B independent? You must show your working.	
10 ABCD is a rectangle with AB = 4 cm and AD = 8 cm. A point P inside the rectangle is such that AP ≤ 4 cm and P is nearer to A than to B. Work out the area of the region in which P can lie. Give your answer in terms of π and surds.	