Day 226 **A Tier 10-a-day**

1 £1 = €1.25.
(a) Change £180 to euros.
(b) Change €175 to pounds.

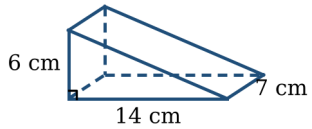
2 A semicircle has diameter 22 cm.
Work out, in terms of π,
(a) the perimeter of the semicircle,
(b) the area of the semicircle.

3 The sum of 3 consecutive whole numbers is 72.
Work out the largest of the numbers.

4 The table shows the times, in minutes, taken by 50 people to finish a race.
(a) Write down the class that contains the median.
(b) Work out an estimate for the mean.

Time, t (minutes)	Frequency
$20 < t \leq 40$	19
$40 < t \leq 60$	14
$60 < t \leq 80$	9
$80 < t \leq 100$	8

5 $A = 2^4 \times 3 \times 7^4$
$B = 2^2 \times 3^2 \times 7^3$
Find the highest common factor (HCF) and the lowest common multiple (LCM) of A and B.
Give your answers as products of prime factors.

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6 The diagram shows a prism. The cross-section of the prism is a right-angled triangle. Work out the volume of the prism. The diagram is not drawn accurately.  	
7 No tax is paid on the first £10,000 of income. Tax of 20% is paid on the next £35,000. Tax of 40% is paid on all income above £45,000. (Calculator) Chloe earns £60,500 a year. Work out the income tax paid.	
8 A ship leaves a port and travels 16 km on a bearing of 075°. (Calculator) It then travels 12 km on a bearing of 345°. (a) Work out how far it is now from the port. (b) Work out the bearing of its final position from the port. Give your answer to the nearest degree.	
9 A bag contains 3 yellow and 7 white balls. Two balls are taken at random without replacement. Work out the probability that the two balls are the same colour.	
10 Make x the subject of $y = \frac{2x - 4}{2x - 2}$	