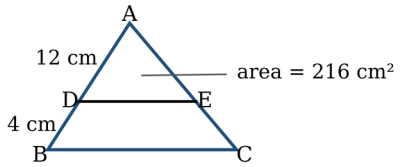
Day 282 **S Tier 10-a-day**

1 The mean of 6 numbers is 146.
One number is removed and the mean of the remaining 5 numbers is 172.4.
Work out the number that was removed.

2 In the diagram, DE is parallel to BC. AD = 12 cm, DB = 4 cm and the area of triangle ADE is 216 cm^2.
Work out the area of the trapezium DBCE.
The diagram is not drawn accurately.



3 The table gives information about the ages of some people.
Work out an estimate for the mean age.
Give your answer correct to 1 decimal place.
(Calculator)

Age, a (years)	Frequency density
$10 < a \leq 15$	1.6
$15 < a \leq 20$	0.8
$20 < a \leq 30$	1
$30 < a \leq 40$	1.8
$40 < a \leq 60$	1.8

4 The width of a table is 7300 cm, correct to the nearest 100.
Write down the error interval for the width of a table, using w.

5 An alloy is made by mixing 120 cm^3 of aluminium with 120 cm^3 of nickel.
The density of aluminium is 2.7 g/cm^3. The density of nickel is 8.9 g/cm^3.
Work out the density of the alloy.

Day 282	S Tier 10-a-day
6 $f(x) = \frac{2x + 6}{x - 2}$ (a) Find $f^{-1}(x)$. (b) Find the value of $f^{-1}(12)$.	
7 Triangle P has vertices A(−5, 3), B(1, 1) and C(−7, 7). Triangle Q has vertices A'(−3, 3), B'(0, 2) and C'(−4, 5). Q is an enlargement of P. Describe fully the single transformation that maps P onto Q.	
8 Show that the line $y = x - 6$ is a tangent to the circle $x^2 + y^2 = 18$. Find the coordinates of the point where the line touches the circle.	
9 The HCF of two numbers is 3 and their LCM is 198. The smaller number is 18. Work out the larger number.	
10 A sector of a circle has radius 8 cm and angle 180°. The sector is made into a cone by joining the two straight edges together. (a) Work out the radius of the base of the cone. (b) Work out the exact volume of the cone. Give your answer in terms of π, as a surd if necessary.	