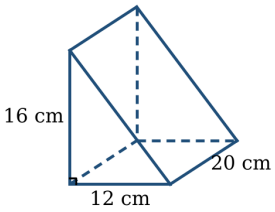
Day 150 **A Tier 10-a-day**

1 The diagram shows a triangular prism.
The cross-section is a right-angled triangle.
Work out the total surface area of the prism.
The diagram is not drawn accurately.

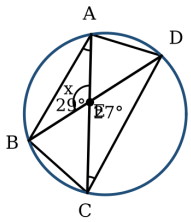


2 A rectangle has length (3x + 4) cm and width (2x − 1) cm.
The perimeter of the rectangle is 66 cm.
(a) Work out the value of x.
(b) Work out the length of the rectangle.

3 Write 126 as a product of prime factors, in index form.

4 Make a the subject of $b = \frac{a + 5}{6}$

5 The population of Island M is 3.75×10^8.
The population of Island N is 1.5×10^7.
How many times bigger is the population of Island M than the population of Island N?

Day 150	A Tier 10-a-day
6 A school has 70 students in Year 9, 50 in Year 10 and 90 in Year 11. A stratified sample of 21 students is to be taken. Work out how many students should be chosen from Year 10.	
7 $f(x) = 2x - 7$ $g(x) = x^2 - 4$ Solve $gf(x) = 77$	
8 A, B, C and D are points on a circle. AC and BD meet at E. Angle BAC = 29° and angle ACD = 27°. Work out the size of angle x (angle AEB). Give reasons for your working. 	
9 Cara invests £2000 in a savings account. (Calculator) The account pays compound interest at a fixed rate each year. After 2 years there is £2121.80 in the account. Work out the annual rate of interest.	
10 A metal block has mass 210 g and volume 187 cm^3. The mass is measured to the nearest 10 grams and the volume to the nearest cm^3. (Calculator) Work out the upper bound for the density of the metal in g/cm^3. Give your answer correct to 3 significant figures.	