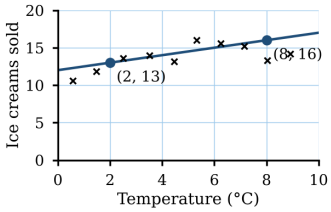
Day 161 **S Tier 10-a-day**

1 Work out the value of $3x - y^3$
when $x = -5$, $y = -2$ and $z = 2$.

2 The scatter graph shows temperature (x) and ice creams sold (y).
The line of best fit passes through (2, 13) and (8, 16).
(a) Find its equation in the form $y = mx + c$.
(b) Explain what its gradient tells you.



3 Solve $8x^2 - 14x + 5 = 0$

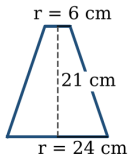
4 A library has 8×10^4 books.
Each book has 2.4×10^4 words.
Work out the total number of words in all the books.
Give your answer in standard form.

5 Make u the subject of $v = \frac{2}{\sqrt{u}}$

Day 161	S Tier 10-a-day

6 Amir sets off at 10:00 and cycles at 24 km/h along a path.
Priya sets off from the same place at 10:15 and cycles at 32 km/h along the same path.
At what time does Priya catch up with Amir?

7 A cone is cut parallel to its base to make a smaller cone and a frustum.
The frustum has height 21 cm, top radius 6 cm and base radius 24 cm.
Work out the volume of the frustum. Give your answer in terms of π.



8 The HCF of two numbers is 8 and their LCM is 480.
The smaller number is 40.
Work out the larger number.

9 Solve $\tan x = \frac{\sqrt{3}}{3}$ for $0° \leq x \leq 360°$.
Do not use a calculator.

10 The price of a car is decreased by x%.
The new price is then increased by x%.
The final price is 25% less than the original price.
Work out the value of x.