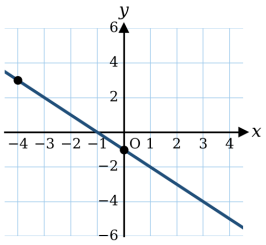
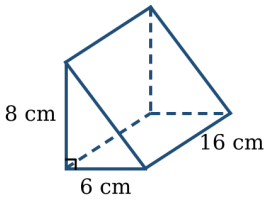
Day 255	A Tier 10-a-day
1 (a) Simplify $\sqrt{245}$ (b) Simplify $\sqrt{245} + \sqrt{125}$	
2 A garden has a straight fence. A tree is planted so that it is always 6 m from the fence. A point S on a plan is 6 m from the fence, on either side. Describe the locus of S.	
3 Expand and simplify $(3 + \sqrt{10})^2$ Give your answer in the form $a + b\sqrt{c}$	
4 Work out the equation of the straight line. Give your answer in the form y = mx + c 	
5 A colony has 11,000 and grows by 8% per day. (Calculator) Work out the number of bacteria after 3 days. Give your answer to the nearest whole number.	

Day 255 **A Tier 10-a-day**

6 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.



7 A bag contains 2 mint and 5 fruit sweets.
Two sweets are taken at random without replacement.
Work out the probability that exactly one of the two sweets is mint.

8 Solve $x^2 - 17x + 52 \leq 0$

9 The table gives information about 114 measurements.
A histogram is drawn using this information.
(a) Work out the missing frequency.
(b) Work out the height of the bar for the class $35 < l \leq 65$.

Length, l (mm)	Frequency
$0 < l \leq 10$	12
$10 < l \leq 15$	?
$15 < l \leq 35$	12
$35 < l \leq 65$	84

10 y is directly proportional to the cube of x.
When x = 4, y = 320.
(a) Find a formula for y in terms of x.
(b) Work out the value of y when x = 7.