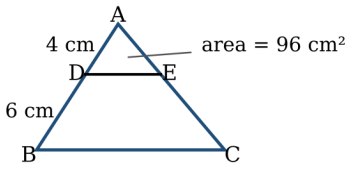
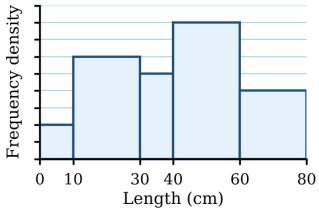
Day 179 **S Tier 10-a-day**

1 In the diagram, DE is parallel to BC. AD = 4 cm, DB = 6 cm and the area of triangle ADE is 96 cm^2.
Work out the area of the trapezium DBCE.
The diagram is not drawn accurately.



2 Solve $x^2 \leq -11x - 28$

3 The histogram shows the lengths of leaves collected from a tree.
400 of them had a length between 60 and 80 cm.
(a) How many had a length between 30 and 40 cm?
(b) How many leaves are there in total?



4 The price of a phone is decreased by 10%.
The new price is then increased by 50%.
Work out the overall percentage change in the price.

5 The point P(6, −1) is rotated 180° about the origin.
The image is then reflected in the y-axis.
(a) Write down the coordinates of the final image of P.
(b) Describe fully the single transformation that is equivalent to these two transformations.

Day 179	S Tier 10-a-day
6 Nadia sets off at 10:00 and cycles at 16 km/h along a path. Isla sets off from the same place at 10:30 and cycles at 36 km/h along the same path. At what time does Isla catch up with Nadia?	
7 a = 9.3 and b = 7.12, both correct to 3 significant figures. Work out a × b. Write down your answer to a suitable degree of accuracy. You must show your working and give a reason for your answer. (Calculator)	
8 Mo invests £2,000 for 4 years at 1.5% per year simple interest. Nia invests £2,000 for 4 years at 1.5% per year compound interest. Work out how much more interest Nia earns than Mo. Give your answer to the nearest penny. (Calculator)	
9 ABCD is a rectangle with AB = 9 cm and AD = 10 cm. A point P inside the rectangle is such that AP ≤ 6 cm and P is nearer to AB than to AD. Work out the area of the region in which P can lie. Give your answer in terms of π.	
10 Prove that the sum of the cubes of any three consecutive integers is a multiple of 9.	