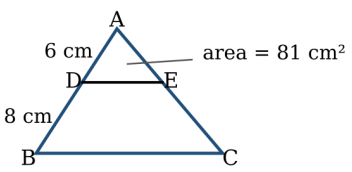
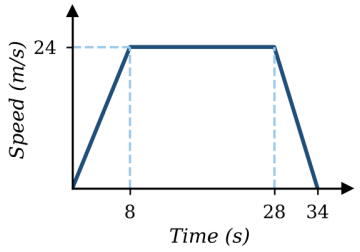
Day 146	S Tier 10-a-day
1 A circular arc has a chord AB of length 48 cm. The greatest distance between the chord and the arc is 8 cm. Work out the radius of the circle.	
2 The 4-digit number 1k53 is a multiple of 9. k is a single digit. Find all the possible values of k.	
3 Sofia, Priya and Oscar share some money. Sofia : Priya = 5 : 6 Priya : Oscar = 2 : 9 (a) Work out the ratio Sofia : Priya : Oscar. (b) They share £190 altogether. How much money does Priya get?	
4 Solve $32^{2x+3} = 2^{2x-1}$	
5 In the diagram, DE is parallel to BC. AD = 6 cm, DB = 8 cm and the area of triangle ADE is 81 cm^2. Work out the area of the trapezium DBCE. The diagram is not drawn accurately. 	

Day 146	S Tier 10-a-day

6 The graph shows the speed of a train between two stations.
(a) Work out the acceleration in the first 8 seconds.
(b) Work out the total distance.



7 An alloy contains 213 g of zinc and 54 g of aluminium.
The density of zinc is 7.1 g/cm^3. The density of aluminium is 2.7 g/cm^3.
Work out the density of the alloy.

8 The area of a square is 231 cm^2, correct to the nearest cm^2.
Work out the lower bound of the side length of the square.
Give your answer correct to 3 significant figures. (Calculator)

9 x is an acute angle and $\tan x = \frac{7}{10}$.
(a) Find the exact value of sin x.
(b) Find the exact value of cos x. Give each answer as a fraction or a surd with a rational denominator.

10 The probability that it rains on a day is 0.6.
If it rains, the probability that Ali is late for school is 0.4.
If it does not rain, the probability that Ali is late is 0.3.
(a) Work out the probability that Ali is late.
(b) Ali is late. Work out the probability that it rained.