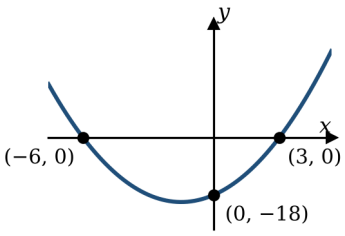
Day 42	S Tier 10-a-day

1 A flight leaves London at 21:25 (London time).
It takes 7 hours 10 minutes.
When it is 12:00 in London it is 19:00 in Singapore.
At what time, in Singapore time, does the flight land? Say if it is on a different day.

2 The diagram shows a sketch of a quadratic curve. It crosses the axes at the points shown.
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.



3 The 5-digit number 6655k is a multiple of 3.
k is a single digit.
Find all the possible values of k.

4 The mean of 5 numbers is 21.
One number is removed and the mean of the remaining 4 numbers is 13.75.
Work out the number that was removed.

5 Solve $8x^2 + 22x - 21 = 0$

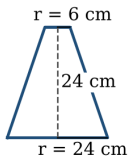
Day 42 **S Tier 10-a-day**

6 The table shows the monthly sales (thousands) over six periods.
The 3-point moving average centred on Mar is 22.
(a) Work out the value of x.
(b) Work out the 3-point moving average centred on Apr.

	Jan	Feb	Mar	Apr	May	Jun
Value	20	14	x	16	8	33

7 A rectangle has area $(18 + 12\sqrt{2})$ cm^2 and length $(2 + 2\sqrt{2})$ cm.
Find the width of the rectangle.
Give your answer in the form $a + b\sqrt{2}$

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



9 Tin A holds red paint and white paint in the ratio 3 : 1.
Tin B holds red paint and white paint in the ratio 1 : 6.
4 litres from tin A and 14 litres from tin B are mixed.
Work out the ratio of red paint to white paint in the mixture.

10 A sector of a circle has radius 6 cm and angle 180°.
The sector is made into a cone by joining the two straight edges together.
(a) Work out the radius of the base of the cone.
(b) Work out the exact volume of the cone.
Give your answer in terms of π, as a surd if necessary.