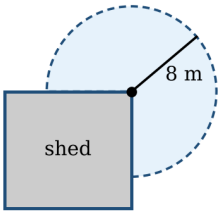
Day 127	A Tier 10-a-day
1 Solve $-5(x - 8) = 3(x - 2) - 2$	
2 The exchange rate is £1 = €1.18. (Calculator) A hotel room costs €259.60 a night. Work out the cost in pounds.	
3 PQ is a straight line of length 4 cm. A point S moves so that it is always 2 cm from the line PQ. Describe the locus of S.	
4 Write as a single fraction $\frac{-4}{(x-5)} + \frac{5}{(x-1)}$	
5 Cara invests £500 in a savings account. (Calculator) The account pays 2% compound interest per year. Work out the amount in the account after 3 years.	

Day 127	A Tier 10-a-day

6 A horse is tied by a rope of length 8 m to the corner of a rectangular shed.
The shed measures 12 m by 11 m.
The horse can graze on any grass it can reach outside the shed.
Work out the area it can graze. Give your answer in terms of π.
The diagram is not drawn accurately.



7 (a) Show that $0.\dot{4}\dot{1} = \frac{41}{99}$

(b) Hence write $1.\dot{4}\dot{1}$ as a mixed number in its simplest form.

8 $x_{n+1} = \frac{6}{(x_n + 3)}$
$x_0 = 1$
Work out the values of x_1, x_2 and x_3.
Give your answers correct to 3 decimal places.
(Calculator)

9 Owen invests £1000 in a savings account.
(Calculator)
The account pays compound interest at a fixed rate each year.
After 2 years there is £1081.60 in the account.
Work out the annual rate of interest.

10 A solid is made from a cylinder and a cone.
The cylinder has radius 6 cm and height 8 cm.
The cone has the same radius as the cylinder and perpendicular height 8 cm.
Work out the total volume. Give your answer in terms of π.