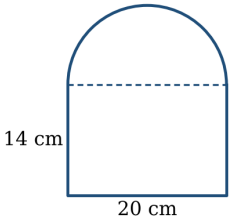
Day 327	A Tier 10-a-day
1 $f(x) = 4x - 1$ $g(x) = x^2 + 8$ (a) Find f(5) (b) Find fg(x). Give your answer in its simplest form.	
2 Write these numbers in order of size, starting with the smallest. 40% 0.47 $\frac{17}{20}$ $\frac{20}{25}$	
3 A scientist wants to estimate the number of frogs in a pond. She catches 20 frogs, marks each one and returns them. Later she catches a second sample of 40 frogs. 4 of these are marked. Work out an estimate for the total number of frogs in a pond.	
4 Triangle STU: ST = 11 cm, TU = 14 cm, SU = 10 cm. Triangle JKL: JK = 14 cm, KL = 10 cm, JL = 11 cm. Are the two triangles congruent? Give a reason for your answer.	
5 Solve the simultaneous equations $-5x - 2y = 14$ $5x - y = -8$	

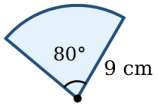
Day 327 **A Tier 10-a-day**

6 The diagram shows a shape made from a rectangle and a semicircle.
Work out the perimeter of the shape.
Give your answer in terms of π.
The diagram is not drawn accurately.



7 The scale of a map is 1 : 50000.
A road is 1.5 km long.
Work out the length of the road on the map, in centimetres.

8 The diagram shows a sector of a circle of radius 9 cm.
Work out the area of the sector.
Give your answer in terms of π.
The diagram is not drawn accurately.



9 For two events A and B:
P(A) = 0.65, P(B) = 0.65 and P(A or B) = 0.85.
(a) Work out P(A and B).
(b) Work out the probability that neither A nor B happens.

10 Mo invests £11,500 in a savings account. (Calculator)
Compound interest is paid at a fixed rate each year.
After 2 years the investment is worth £15,208.75.
Work out the annual rate of interest.