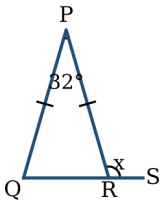
Day 199 **A Tier 10-a-day**

1 PQR is an isosceles triangle with PQ = PR.
QRS is a straight line.
Angle QPR = 32°.
Work out the size of angle x.
The diagram is not drawn accurately.



2 The exchange rate is £1 = €1.15. (Calculator)
A hotel room costs €391 a night.
Work out the cost in pounds.

3 A cylinder has radius 6 cm. It contains water to a depth of 17 cm. (Calculator)
All the water is poured into an empty tank with a rectangular base 25 cm by 8 cm.
Work out the depth of the water in the tank.
Give your answer to 3 significant figures.

4 The table shows the results from 50 hens.
(a) Work out the mean.
(b) Write down the mode.

Eggs laid	1	2	3	4	5
Frequency	13	5	20	4	8

5 The curve C has equation $y = x^2 - 6x + 8$
(a) Find the coordinates of the points where C crosses the x-axis.
(b) Find the coordinates of the turning point of C.

Day 199	A Tier 10-a-day
6 A rectangle has length 14 cm and width 7 cm. Each measurement is correct to the nearest cm. Work out the upper bound for the perimeter of the rectangle.	
7 A rectangle has width x cm and length (x + 4) cm. The area of the rectangle is 60 cm^2. (a) Show that $x^2 + 4x - 60 = 0$ (b) Work out the value of x.	
8 A is the point (−3, 1) and B is the point (−6, 5). (a) Write →AB as a column vector. (b) Work out the length of AB.	
9 A block exerts a force of 20 N on the floor. The area in contact with the floor is 0.2 m^2. Work out the pressure on the floor in N/m^2.	
10 (a) Factorise $x^2 - 100$ (b) Use the same idea to work out $7^2 - 3^2$ without a calculator.	