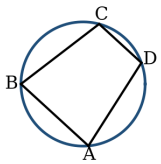
Day 85	S Tier 10-a-day

1 ABC is an isosceles triangle with AB = AC.
Angle BAC = (3x + 20)°
Angle ABC = (2x + 38)°
(a) Work out the value of x.
(b) Work out the size of angle BAC.

2 (a) Solve $3 - 2x \leq -17$
(b) n is an integer. Write down all the values of n that satisfy
$-11 \leq 2n - 5 < -5$

3 A, B, C and D are points on a circle. Angle DAB = (2x + 20)°, angle BCD = (3x + 45)° and angle ABC = (2x + 30)°.
(a) Work out the value of x.
(b) Work out the size of angle ADC.
The diagram is not drawn accurately.



4 A bag contains sweets.
$\frac{3}{5}$ of the sweets are orange and $\frac{1}{4}$ of the sweets are lemon.
The rest of the sweets, 18 of them, are strawberry.
How many sweets are in the bag?

5 y is inversely proportional to the square root of x.
When x = 9, y = 20.
Find the value of y when x = 25.

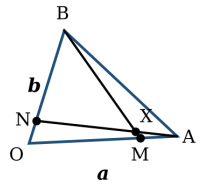
Day 85 **S Tier 10-a-day**

6 Prove that the sum of the squares of any five consecutive integers is always a multiple of 5.

7 Solve $16^{x+4} = 4^4$

8 F is directly proportional to m and inversely proportional to the square of d.
When m = 6 and d = 6, F = 2.
Work out the value of F when m = 4 and d = 1.

9 OAB is a triangle. OA = **a** and OB = **b**.
M is on OA with OM : MA = 3 : 1. N is on OB with ON : NB = 1 : 4. AN and BM intersect at X.
(a) Find BM in terms of **a** and **b**.
(b) Find OX in terms of **a** and **b**.
The diagram is not drawn accurately.



10 The table gives information about 90 masses.
Work out an estimate for the median.
Assume the values in each class are evenly spread.

Mass, m (kg)	Frequency
$10 < m \leq 20$	27
$20 < m \leq 30$	30
$30 < m \leq 40$	8
$40 < m \leq 50$	6
$50 < m \leq 60$	15
$60 < m \leq 70$	4