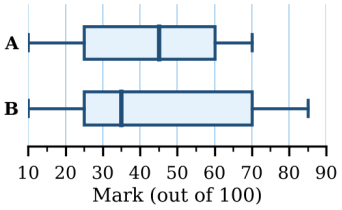
Day 352	S Tier 10-a-day
1 ABC is an isosceles triangle with AB = AC. Angle BAC = (4x + 10)° Angle ABC = (x + 4)° (a) Work out the value of x. (b) Work out the size of angle BAC.	
2 Kira and Sofia play a match. The first to win 2 chess games wins the match. The probability that Kira wins any one of the chess games is $\frac{4}{5}$. Work out the probability that Kira wins the match.	
3 Factorise fully $5x^2 + 15x - 50$	
4 Simplify fully $\frac{4\sqrt{90}}{3\sqrt{10}}$	
5 Solve $2 \sin x° - 4 = -2$ for $0 \leq x \leq 360$	

Day 352	S Tier 10-a-day

6 The box plots show the test marks of the students in two classes, A and B.
(a) Work out the interquartile range for each.
(b) Compare the distributions of A and B.



7 A red light flashes every 4 minutes.
A blue light flashes every 8 minutes.
A green light flashes every 24 minutes.
They all flash together at 6:00 am.
(a) At what time do they next flash together?

8 A is the point $(0, -2)$ and B is the point $(10, 4)$.
Find an equation of the perpendicular bisector of AB.
Give your answer in the form $ax + by = c$, where a, b and c are integers.

9 A circle has equation $x^2 + y^2 = 625$.
The point $P(7, -24)$ lies on the circle.
(a) Find the equation of the tangent to the circle at P. Give your answer in the form $ax + by = c$, where a, b and c are integers.
(b) The tangent meets the x-axis at the point T.
Write down the coordinates of T.

10 The brightness of a lamp is inversely proportional to the square of the distance from the lamp.
The distance from the lamp is increased by 300%.
Work out the percentage change in the brightness of a lamp.