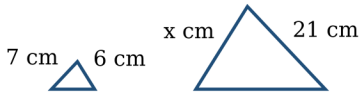
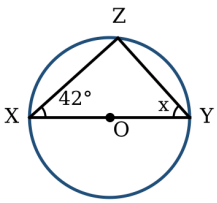
Day 92	A Tier 10-a-day

1 The two triangles are similar.
Work out the value of x.
The diagrams are not drawn accurately.



2 Here are the times, in seconds, taken by 11 runners.
22 6 40 45 34 52 36 58 43 28 39
(a) Work out the median.
(b) Work out the interquartile range.

3 XY is a diameter of the circle.
Angle YXZ = 42°.
Work out the size of angle x.
Give a reason for each step of your working.



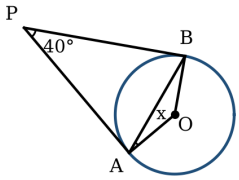
4 A straight line passes through the points (3, −5) and (7, −1).
Find the equation of the line.

5 The value of a painting is decreased by 5%.
The new value is then increased by 10%.
Work out the overall percentage change.

Day 92 **A Tier 10-a-day**

6 A runner travels 370 m in 12.9 s. The distance is measured to the nearest 10 metres and the time to the nearest 0.1 second. (Calculator)
Work out the upper bound for the runner's speed in m/s.
Give your answer correct to 3 significant figures.

7 PA and PB are tangents to a circle with centre O.
Angle APB = 40°.
Work out the size of angle x (angle OAB).
Give a reason for each step of your working.



8 Expand and simplify
$(x + 3)(x + 1)(x - 2)$

9 A cyclist travels 700 metres in 6.5 seconds. The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second.
(a) Work out the upper bound and the lower bound of the speed in m/s.
(b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.

10 The table gives information about 115 measurements.
A histogram is drawn using this information.
(a) Work out the missing frequency.
(b) Work out the height of the bar for the class $65 < l \leq 80$.

Length, l (mm)	Frequency
$0 < l \leq 20$	40
$20 < l \leq 50$	?
$50 < l \leq 65$	21
$65 < l \leq 80$	6