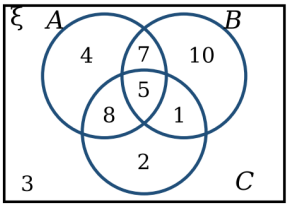
Day 178 **IGCSE 10-a-day**

1 Solve $\frac{x-3}{2} - \frac{x-1}{8} = 2$

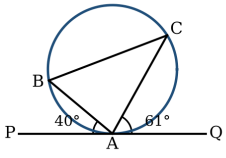
2 $f(x) = -x + 3$ and $g(x) = 2x^2 + x + 6$.
(a) Work out g(1).
(b) Work out fg(3).

3 $f(x) = x^2 - 8x + 7$
Use differentiation to find the coordinates of the turning point of the graph of y = f(x). State whether it is a maximum or a minimum.

4 The Venn diagram shows information about 40 students.
A: study Art B: study Music C: study Drama
(a) Find $n(B \cup C)'$.
(b) Find $n((A \cap B) \cup C)$.



5 PAQ is a tangent to the circle at A. B and C are points on the circle. Angle PAB = 40° and angle CAQ = 61°.
(a) Work out the size of angle ABC.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



Day 178	IGCSE 10-a-day
6 A curve has equation $y = (x - 2)(x - 2)(x - 2)$. Find the equation of the tangent to the curve at the point where $x = -2$.	
7 In a group of students, 65% are boys and the rest are girls. 30% of the boys and 35% of the girls walk to school. What percentage of all the students walk to school?	
8 The line $y = 3x + k$ is a tangent to the curve $y = -2x^2 - 5x - 4$. Find the value of the constant k.	
9 An alloy contains 355 g of zinc and 395 g of iron. The density of zinc is 7.1 g/cm^3. The density of iron is 7.9 g/cm^3. Work out the density of the alloy.	
10 a = 46.4 and b = 0.692, both correct to 3 significant figures. Work out a ÷ b. Write down your answer to a suitable degree of accuracy. You must show your working and give a reason for your answer. (Calculator)	