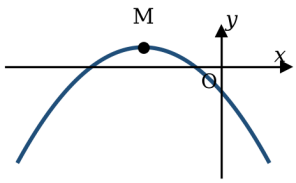
Day 358	IGCSE 10-a-day
1 Work out the value of $3p - q^3$ when $p = -3$, $q = 1$ and $r = -3$.	
2 A bag contains sweets. $\frac{1}{8}$ of the sweets are orange and $\frac{5}{8}$ of the sweets are lemon. The rest of the sweets, 30 of them, are strawberry. How many sweets are in the bag?	
3 The curve $y = 2x^2 + x - 4$ crosses the y-axis at the point A. The tangent to the curve at A meets the x-axis at B. Find the coordinates of B.	
4 An alloy contains 356 g of nickel and 142 g of zinc. The density of nickel is 8.9 g/cm^3. The density of zinc is 7.1 g/cm^3. Work out the density of the alloy.	
5 The graph of $y = f(x)$ has a maximum point at $(4, -2)$. Write down the coordinates of the turning point of the graph of (a) $y = f(x) + 3$ (b) $y = f(x/2) - 3$	

Day 358 **IGCSE 10-a-day**

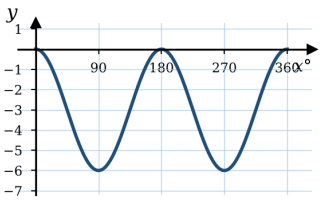
6 The point P(−3, 4) lies on the graph of y = f(x).
Write down the coordinates of the image of P on the graph of
(a) y = f(x) + 2
(b) y = f(x + 2)

7 The diagram shows a sketch of the curve $y = ax^2 + bx - 10$.
The curve has a turning point at M(−3, 8).
Find the values of a and b.



8 A culture has 1000 bacteria.
The number of bacteria increases by 4% each hour.
After how many whole hours will there first be more than 1500 bacteria? (Calculator)

9 The diagram shows the graph of y = a cos bx° + c for 0 ≤ x ≤ 360.
a, b and c are integers.
Find the values of a, b and c.



10 $f(x) = 3x + \frac{12}{x}$ for x > 0

(a) Find the range of values of x for which f is a decreasing function.
(b) Write down the least value of f(x).