Crack the Code — Using the Discriminant

A	The quadratic $2x^2 - x - k = 0$ has a discriminant of 105. Find the value of k. 13	**B**	Given the value of the discriminant of the equation $x^2 + ax - 1 = 0$ is 85, find the positive value of a. 9
C	Find the value of b for which the function $f(x) = bx^2 + 10x + 3$ has a discriminant of 40. 5	**D**	Without solving the equation, find the number of real solutions to the equation $7x^2 - 15x + 3 = 0$ 2
E	Find the largest integer value of c for which $x^2 + 10x + c = 0$ has two real solutions. 24	**F**	Find the positive value of p for which $3x^2 - px + 12 = 0$ has only one solution. 12
G	The function $f(x) = 9x^2 - 30x + k$ has equal roots. Find the value of k. 25	**H**	Find the smallest positive integer value of a for which $a - 5x + x^2 = 0$ has no real solutions. 7
I	The equation $x^2 + (2 - 3b)x + b^2 = 0$ has equal roots. Find the integer value of b. 2	**J**	Find the largest positive integer value for a for which the function $f(x) = 3x^2 - ax + 3 = 0$ has no real roots. 5

To get the three-digit code, add together all your answers. 104