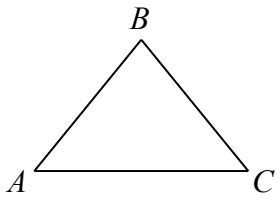
0 (a). Evaluate $\dfrac{9+3\times 3}{3}$.

0 (b). Let t be TNYWR.
What is the area of a triangle with base $2t$ and height $3t+2$?

0 (c). Let t be TNYWR.
In the diagram, $\triangle ABC$ is isosceles with $AB = BC$. If $\angle ABC = t^\circ$, what is the measure of $\angle BAC$, in degrees?



1 (a). The integers 390 and 9450 have three common positive divisors that are prime numbers. What is the sum of these prime numbers?

1 (b). Let t be TNYWR.

If $n = \dfrac{(4t^2 - 10t - 2) - 3(t^2 - t + 3) + (t^2 + 5t - 1)}{(t + 7) + (t - 13)}$, what is the value of n?

1 (c). Let t be TNYWR.

Azmi has two fair dice, each with six sides.

The sides of one of the dice are labelled $1, 2, 3, 4, 5, 6$.

The sides of the other die are labelled $t - 10, t, t + 10, t + 20, t + 30, t + 40$.

When these two dice are rolled, there are 36 different possible values for the sum of the numbers on the top faces. What is the average of these 36 possible sums?

2 (a). The expression $2(x-3)^2-12$ can be re-written as ax^2+bx+c for some numbers a, b, c. What is the value of $10a-b-4c$?

2 (b). Let t be TNYWR.
The line ℓ passes through the points $(-4, t)$ and (k, k) for some real number k.
The line ℓ is perpendicular to the line passing through the points $(11, -7)$ and $(15, 5)$.
What is the value of k?

2 (c). Let t be TNYWR.
In a magic square, the sum of the numbers in each column, the sum of the numbers in each row, and the sum of the numbers on each diagonal are all the same. In the magic square shown, what is the value of N?

	$3t-2$	$4t-6$	
$4t-1$	$2t+12$	$t+16$	$3t+1$
N	$4t-2$		$t+15$
			$4t-5$

3 (a). The line with equation $y = 5x + a$ passes through the point (a, a^2). If $a \neq 0$, what is the value of a?

3 (b). Let t be TNYWR.
The CEMC Compasses basketball team scored exactly $10t$ points in each of 4 games and scored exactly 20 points in each of g games. Over this set of games, they scored an average of 28 points per game. What is the value of g?

3 (c). Let t be TNYWR.
The pair $(x, y) = (a, b)$ is a solution of the system of equations

$$x^2 + 4y = t^2$$
$$x^2 - y^2 = 4$$

If $b > 0$, what is the value of b?