0 (a). Evaluate $\frac{9 + 2 \times 3}{3}$.

0 (b). Let $t$ be TNYWR.
What is the area of a triangle with base $2t$ and height $3t - 1$?

0 (c). Let $t$ be TNYWR.
In the diagram, $\triangle ABC$ is isosceles with $AB = BC$. If $\angle BAC = t^\circ$, what is the measure of $\angle ABC$, in degrees?
1 (a). If \( w \) is a positive integer with \( w^2 - 5w = 0 \), what is the value of \( w \)?

1 (b). Let \( t \) be TNYWR.

In the diagram, the larger square has side length \( 2t - 4 \) and the smaller square has side length 4. What is the area of the shaded region?

![Diagram with larger square and smaller square]

1 (c). Let \( t \) be TNYWR.

Consider the three-digit positive integers of the form \( xy0 \), where \( x \) and \( y \) are digits with \( x \neq 0 \). How many of these integers are divisible by both 11 and \( t \)?
2 (a). When the integer $300^8$ is written out, it has $d$ digits. What is the value of $d$?

2 (b). Let $t$ be TNYWR. The area of the triangle formed by the line $\sqrt{k}x + 4y = 10$, the $x$-axis and the $y$-axis is $t$. What is the value of $k$?

2 (c). Let $t$ be TNYWR. Justin measures the heights of three different trees: a maple, a pine and a spruce. The maple tree is 1 m taller than the pine tree and the pine tree is 4 m shorter than the spruce tree. If the ratio of the height of the maple tree to the spruce tree is $t$, what is the height of the spruce tree, in metres? (Write your answer in the form $\frac{a}{b}$, where $a$ and $b$ are positive integers with no common divisor larger than 1.)
3 (a). Suppose that \( x = \sqrt{20 - 17} - 2 \times 0 - 1 + 7 \). What is the value of \( x \)?

3 (b). Let \( t \) be TNYWR. If the graph of \( y = 2\sqrt{2t} \sqrt{x} - 2t \) passes through the point \((a, a)\), what is the value of \( a \)?

3 (c). Let \( t \) be TNYWR. Suppose that
\[
\frac{1}{2^{12}} + \frac{1}{2^{11}} + \frac{1}{2^{10}} + \cdots + \frac{1}{2^{t+1}} + \frac{1}{2^t} = \frac{n}{2^{12}}
\]
(The sum on the left side consists of \( 13 - t \) terms.)
What is the value of \( n \)?