1. Fill in the following blanks with the correct numbers.

(1) The number of integers $x$ that satisfy the following inequalities

$$x^2 - 5x + 1 < 0$$

is ______.

(2) When $-1 < a < 2$, then $\sqrt{a^2 + 2a + 1} + \sqrt{a^2 - 4a + 4} = ______$.

(3) When $2^x - 2^{-x} = 4$, then $2^{2x} + 2^{-2x} = \boxed{1}$, $2^{3x} - 2^{-3x} = \boxed{2}$.

(4) When $\log_3(x - 3) - \log_3(x - 1) = 0$, then $x = ______$.

(5) When $AB = x + 2$, $BC = x$, $AC = x - 2$, $\angle C = 120^\circ$ with $\triangle ABC$, then $x = ______$.

(6) Four-digit numbers are made using the digits \{0,1,2,3,4\} where each digit is different.

How many four-digit numbers are there? The answer is ______.

How many four-digit odd numbers are there? The answer is ______.

(7) $1^2 + 2^2 + 3^2 + 4^2 + 5^2 = \boxed{1}$.

$6^2 + 7^2 + 8^2 + 9^2 + 10^2 + 11^2 + 12^2 + 13^2 = \boxed{2}$.

(8) Let $\vec{a} = (-1, 2) \quad \vec{b} = (1, x)$. When $2\vec{a} + 3\vec{b}$ and $\vec{a} - 2\vec{b}$ are the parallel vectors, then $x = ______$.

(9) Let $f(x) = x^2 + 2x - 1$, $g(x) = x + 1$

(i) If $f(x) = g(x)$, $x = \boxed{1}$ or $x = \boxed{2}$.

(ii) The coordinate of the vertex point of the parabola $y = f(x)$ is

$\left(\boxed{1}, \boxed{2}\right)$.

(iii) The equation of the tangent to the parabola $y = f(x)$ at the point $(0, f(0))$ is

$y = ______$.

(iv) The area bounded by the parabola $y = f(x)$ and the line $y = g(x)$ is ______.
2. The circle O is an inscribed circle of \( \triangle ABC \) and points P, Q and R are the points of tangency of sides BC, CA and AB respectively. 
\( AB = AC = 13 \), \( BC = 10 \).

Fill in the following blanks with the correct numbers.

(1) \( AR = \boxed{ \text{ } } \).
(2) \( \sin \angle AOR = \boxed{ \text{ } } \).
(3) \( \tan \angle AOR = \boxed{ \text{ } } \).
(4) The radius of the inscribed circle O = \boxed{ \text{ } }.
(5) The scalar product of two vectors \( \overrightarrow{AB} \cdot \overrightarrow{AO} = \boxed{1} \), \( \overrightarrow{AB} \cdot \overrightarrow{BC} = \boxed{2} \).

3. The graphs of function \( y = ax^2 + bx + c \) on the plane \( xy \) are shown below.

Fill the blanks with the appropriate values of \( a \), \( b \) and \( c \) for each graph.

(1) \( a = \boxed{1} \), \( b = \boxed{2} \), \( c = \boxed{3} \)
(2) \( a = \boxed{1} \), \( b = \boxed{2} \), \( c = \boxed{3} \)
(3) \( a = \boxed{1} \), \( b = \boxed{2} \), \( c = \boxed{3} \)