

$$\cdot 6 \quad \left. \begin{array}{l} a_1 = 3 \\ a_{100} = 30 \end{array} \right\} -30 = 3 + d \cdot (100-1) \rightarrow |d = -\frac{1}{3}|$$

$$a_1^2 - a_2^2 + a_3^2 - a_4^2 + \dots + a_{99}^2 - a_{100}^2$$

$$(a_1 - a_2)(a_1 + a_2) + (a_3 - a_4)(a_3 + a_4) + \dots + (a_{99} - a_{100})(a_{99} + a_{100}) =$$

$$-d(a_1 + a_2) - d(a_3 + a_4) + \dots - d(a_{99} + a_{100}) = -d(a_1 + a_2 + a_3 + a_4 + \dots + a_{99} + a_{100}) =$$

$$= -\frac{1}{3} \cdot \frac{100}{2} [3 + 30] = -450$$