

$$(2) \quad y = x^2 + 12x + 5$$

$$\text{Step (1)} \quad y = (x^2 + 12x) + 5$$

$$\text{Step (2)} \quad y = (x^2 + 12x + \square) + 5 - \square$$

$$\square = \left(\frac{1}{2}b\right)^2 \quad y = (x^2 + 12x + \boxed{36}) + 5 - \boxed{36}$$

$$\boxed{36} = \left(\frac{1}{2}(12)\right)^2$$

$$\text{Step (3)} \quad y = (x + 6)^2 - 31$$

Vertex: $(-6, -31) \rightarrow \text{minimum}$