$\mathbb{E}[X] = \mathbb{E}(X-1)$

$\mathbb{E}[X] = \mathbb{E}(X-1) + 1$

$\mathbb{E}[X] = \mathbb{E}(X-1) + \mathbb{E}(1)$

$\mathbb{E}[X] = \mathbb{E}(X-1) + \mathbb{E}(1)$

$\mathbb{E}[X] = \mathbb{E}(X-1) + 1