$X =$ monthly salary
$\mu = \$5,000$
$\sigma = \$700$

$Y =$ annual salary
fixed portion (annual) $= \$25,000$

---

incorrect

$$Y = 25,000 + 12 \cdot X$$

a) $E(Y) = 25000 + 12 \cdot E(X)$
$\quad = 25000 + 12 \cdot 5,000$
$\quad = \boxed{85,000}$

b) $var(Y) = (12)^2 \cdot var(x)$
$stdev(Y) = 12 \cdot stdev(x)$
$\quad = 12 (700)$
$\quad = \boxed{8,400}$

correct

$$Y = 25000 + \sum_{i=1}^{12} X_i$$

$\underbrace{X + X + X \dots}_{12 \text{ times}}$

a) $E(Y) = 25000 + 12 \cdot E(x)$
$\quad = \boxed{85,000}$

b) $var(Y) = var(x) \cdot 12$
$\sigma = stdev(Y) = \sqrt{12} \cdot stdev(x)$
$\quad = \sqrt{12} \cdot 700$
$\quad = \boxed{2,424.87}$

$Y = 25,000 + \underbrace{X+X+X \dots + X}_{\substack{12 \text{ times.} \\ X\text{'s are independent}}}$

$var(Y) = \underbrace{var(x) + var(x) \dots + var(x)}_{12 \text{ times}}$
$\quad = 12 \cdot var(x)$

Remember: In probability, X + X + X + X + X + X + X + X + X + X + X + X is not the same as 12*X! :-)