

$$E(X) = 3$$

$$V(X) = 2$$

1) $Y = 2X$

$Y = aX + b$ avec

$$\begin{cases} a = 2 \\ b = 0 \end{cases}$$

$$E(Y) = aE(X) + b$$

$$V(Y) = a^2 V(X)$$

$$E(Y) = 2E(X)$$

$$V(Y) = 4V(X)$$

$$E(Y) = 6$$

$$V(Y) = 8$$

2) $Z = 3X + 1$

$Z = aX + b$ avec

$$\begin{cases} a = 3 \\ b = 1 \end{cases}$$

$$E(Z) = aE(X) + b$$

$$V(Z) = a^2 V(X)$$

$$E(Z) = 3E(X) + 1$$

$$V(Z) = 9V(X)$$

$$E(Z) = 10$$

$$V(Z) = 18$$

3) $T = -X$

$T = aX + b$ avec

$$\begin{cases} a = -1 \\ b = 0 \end{cases}$$

$$E(T) = aE(X) + b$$

$$V(T) = a^2 V(X)$$

$$E(T) = -E(X)$$

$$V(T) = (-1)^2 V(X)$$

$$E(T) = -3$$

$$V(T) = 2$$

4) $U = 2(X-1)$
 $U = 2X - 2$

$U = aX + b$ avec

$$\begin{cases} a = 2 \\ b = -2 \end{cases}$$

$$E(U) = aE(X) + b$$

$$V(U) = a^2 V(X)$$

$$E(U) = 2E(X) - 2$$

$$V(U) = 4V(X)$$

$$E(U) = 4$$

$$V(U) = 8$$