

Income(X)	Probability p(x)	Tax t(x)
20K	0.1	4K
30K	0.3	6K
40K	0.4	9K
50K	0.2	13K

JMS

(a) Expected income = $E(X)$

$$= \sum x p(x)$$

$$= 20000(0.1) + 30000(0.3) + 40000(0.4) + 50000(0.2)$$

$$= \boxed{37000} \text{ or } 37k$$

(b) Expected tax = $4000(0.1) + 6000(0.3) + 9000(0.4) + 13000(0.2)$

$$= \boxed{8400} \text{ or } 8.4k$$

(c)

(i) Disposable income (after tax) Probability p(x)

$$20K - 4K = 16K \quad 0.1$$

$$30K - 6K = 24K \quad 0.3$$

$$40K - 9K = 31K \quad 0.4$$

$$50K - 13K = 37K \quad 0.2$$

$\therefore$ Expected disposable income after tax

$$= 16000(0.1) + 24000(0.3) + 31000(0.4) + 37000(0.2)$$

$$= \boxed{28600} \text{ or } 28.6K$$

(ii) $E(\text{dis income}) = E(\text{income} - \text{tax})$

$$= E(\text{income}) - E(\text{tax})$$

$$= 37K - 8.4K$$

$$= 28.6K \text{ or } \boxed{28600}$$

SAME ANSWER