

Quiz #2 - Yellow

① $\bar{x} = 5$
 $\min = 2$
 $\max = 9$

2, 3, 3, 3, 4, 5, 6, 7, 8, 9
[$Q_1 = 3$ $Q_2 = 4.5$ $Q_3 = 7$]

(also accepted, $Q_1 = \frac{3+3}{2} = 3$ and $Q_3 = \frac{7+8}{2} = 7.5$)

② Z-Score
$$Z = \frac{9.25 - \bar{x}}{2.4}$$

$$= 1.77$$

$$< 3$$

 \Rightarrow Not an outlier.

IQR
$$IQR = Q_3 - Q_1 = 7 - 3 = 4$$

$$LF = Q_1 - 1.5(IQR) = -3$$

$$UF = Q_3 + 1.5(IQR) = 13$$

$$-3 < 9.25 < 13$$

 \Rightarrow Again, not an outlier

③ $P(\text{uninsured}) = 0.67$

$P(\text{insured}) = 1 - 0.67 = 0.33$

Ⓐ $P(\text{uninsured} \cap \text{uninsured}) = P(\text{uninsured})^2 = (0.67)^2 = \underline{0.4489}$

Ⓑ $P(\text{uninsured} \cap \text{insured}) = P(\text{uninsured})P(\text{insured}) = (0.67)(0.33) = \underline{0.2211}$

Ⓒ $P(\text{insured} \cap \text{insured}) = P(\text{insured})^2 = (0.33)^2 = \underline{0.1089}$

④ $P(\text{red starburst}) = 0.26$

$P(\text{no red starburst}) = 1 - 0.26 = \underline{0.74}$

⑤ $P(A \cap B) = \underline{0}$

Quiz #2 - White

① $\bar{x} = 6.42$
min = 1
max = 10

1, 2, 5, 6, 7, 8, 8, 8, 9.2, 10
 $Q_1 = 5$ $Q_2 = 7.5$ $Q_3 = 8$

(also accepted, $Q_1 = \frac{2+5}{2} = 3.5$ and $Q_3 = 8.6$)

② Z-score

$$z = \frac{9.1 - \bar{x}}{2.9}$$

$$= 0.9241$$

$$< 3$$

⇒ Not an outlier

IQR

$$IQR = Q_3 - Q_1 = 8 - 5 = 3$$

$$LF = Q_1 - 1.5(IQR) = 0.5$$

$$UF = Q_3 + 1.5(IQR) = 12.5$$

$$0.5 < 9.1 < 12.5$$

⇒ Again, not an outlier

③ $P(\text{uninsured}) = 0.76$

$$P(\text{insured}) = 1 - 0.76 = 0.24$$

Ⓐ $P(\text{uninsured} \cap \text{uninsured}) = P(\text{uninsured})^2 = (0.76)^2 = 0.5776$

Ⓑ $P(\text{uninsured} \cap \text{insured}) = P(\text{uninsured})P(\text{insured}) = (0.76)(0.24) = 0.1824$

Ⓒ $P(\text{insured} \cap \text{insured}) = P(\text{insured})^2 = (0.24)^2 = 0.0576$

④ $P(\text{red starburst}) = 0.82$

$$P(\text{no red starburst}) = 1 - 0.82 = 0.18$$

⑤ $P(A \cap B) = 0$