Homework 2　林業誠　E24105038　資訊114甲

2.66) (a) P(Unsafe Conditions of graveyard shift ∪ Human Error of graveyard shift)

$= 0.02 + 0.3$

$= 0.32$

(b) P(Human Error of Day ∪ Human Error of Evening ∪ Human Error of graveyard)

$= 0.32 + 0.25 + 0.3$

$= 0.87$

(c) P(U.C of Day ∪ U.C of Evening ∪ U.C of graveyard)

$= 0.05 + 0.06 + 0.02$

$= 0.13$

(d) P(probability of accident in evening ∪ probability of accident graveyard shift)

$= (0.06 + 0.25) + (0.02 + 0.3)$

$= 0.63$

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2.82) (a) P(at least one member vote)

$= (0.2 - 0.15) + (0.28 - 0.15) + 0.15$

$= 0.33$

(b) P(wife vote | given husband vote)

$= \frac{0.15}{0.2}$

$= 0.75$

(c) P(husband vote | wife not vote)

$= \frac{0.2 - 0.15}{1 - 0.28}$

$= \frac{5}{72}$

2.90)

(a) $P(A \cap B \cap C) = P(A \cap B) \cdot P(C \mid A \cap B)$

$= 0.225 \cdot 0.2$

$= 0.045$

(b) $P(B' \cap C) = P(A \cap B' \cap C) + P(A' \cap B' \cap C)$

$= P(C \mid A \cap B') P(B' \mid A) P(A)$

$+ P(C \mid A' \cap B') P(B' \mid A') P(A')$

$= (0.8)(1 - 0.75)(0.3) + (0.9)(1 - 0.2)(1 - 0.3)$

$= 0.564$

(c) $P(C) = P(A \cap B \cap C) + P(A \cap B' \cap C) + P(A' \cap B \cap C) + P(A' \cap B' \cap C)$

$= 0.045 + 0.06 + 0.21 + 0.504 = 0.63$

(d) $P(A \mid B' \cap C) = \frac{P(A \cap B' \cap C)}{P(B' \cap C)} = \frac{0.06}{0.564}$

$= 0.1064$

CamScanner

2.106) $p = \dfrac{\text{number of malfunction caused by other human errors in station C}}{\text{total number of malfunction caused by other human errors}}$

$= \dfrac{5}{7+7+5} = \dfrac{5}{19}$

2.126)(a) $p = \dfrac{\text{total number of worker found a job in new company in same field and is union member}}{\text{total number of worker found a job in new company in same field}}$

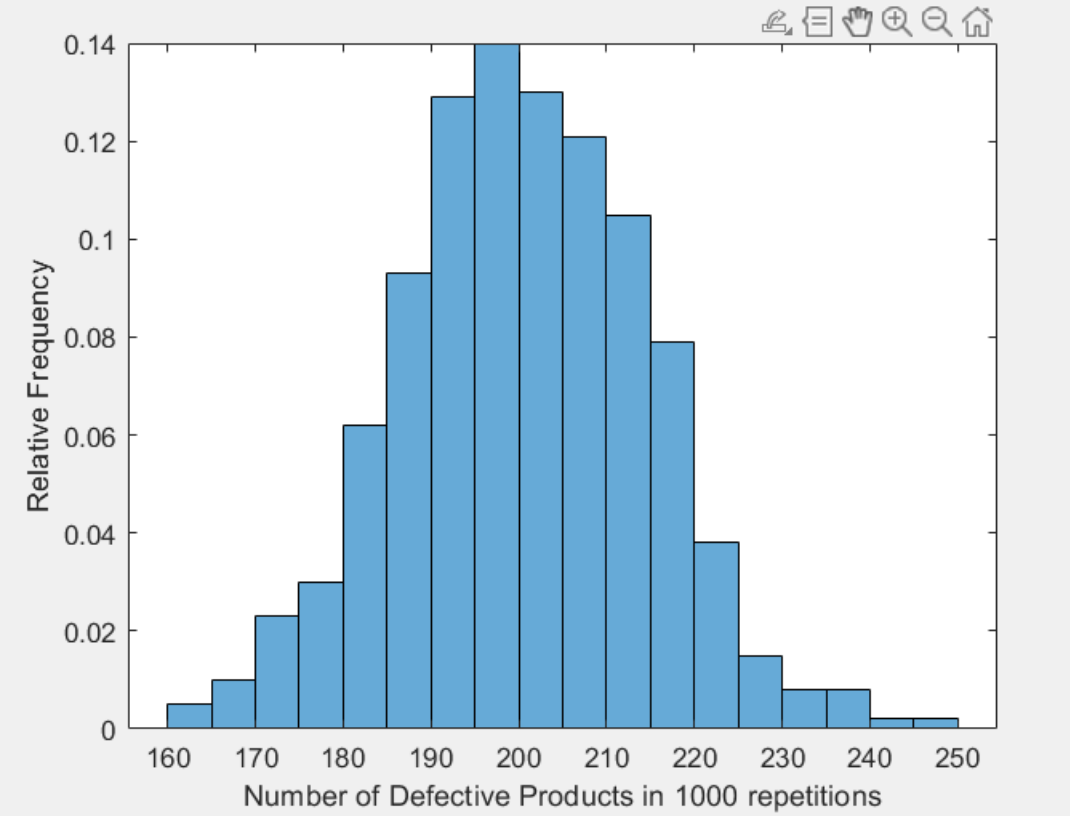
$= \dfrac{13}{13+10} = \dfrac{13}{23}$

(b) $p = \dfrac{\text{total number of unemployed of union member}}{\text{total number of union number}}$

$= \dfrac{2}{40+13+4+2} = \dfrac{2}{59}$

CamScanner

## 1(b)




## 1(c)

```
>> HW2_1c
    0.1936    0.2129    0.1888    0.2129    0.1969    0.2058    0.2020    0.2108    0.2020    0.1987

>>
```

**By using disp() function or .mat file, I get the result like the above. Comparing with the theoretical value shown in Example 2.42 that is 10/49, approximately is 0.2041, the minimum and maximum from result above are 0.1888 and 0.2129 respectively and the deviation/error percentage is under 10%. Hence, the result above is considered as acceptable result.**