

## 2024년 1학기 컴퓨터 응용통계 답안지

학번 .....C389008..... 이름...김동혁..... 서명 김동혁.....

문항번호	답	문항번호	답
1	2	11	1
2	4	12	2
3	3	13	1
4	3	14	3
5	2	15	2
6	4	16	3
7	4	17	4
8	2	18	4
9	4	19	3
10	3	20	3

여기에 번호순으로 손풀이, R코드와 결과 붙여서,  
PDF로 저장하기

1.

```
plot(Type, Max.Price)
```

boxplot(Width~Man.trans.avail, Cars93)

2.

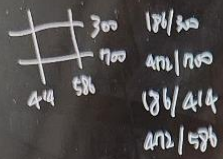
3.

4.

5.

6.

7~20

7. 

8.  $0.01 \times 0.02 = 0.0002$

9.  $\frac{0.6 \times 0.99}{(0.6 \times 0.99) + (0.4 \times 0.01)} = 0.993311$

10.

$$E[X] = -24 + 0.4 + 1.2 = -1.2$$

$$E[X^2] = 0.8 + 0.4 + 3.6 = 4.8$$

$$\text{Var}(X) = 4.8 - (-1.2)^2 = 3.36$$

11.

$$E[X^2] - E[X]E[Y] = 2E[Y^2]$$

$$\text{Var}(X) = E[X^2] - (E[X])^2$$

$$1 = E[X^2] - (E[X])^2$$

$$E[X^2] = 5$$

$$5 + 2 - 8 = -1$$

12.

$$E[X] = -\frac{1}{4} - \frac{1}{8} + \frac{1}{4} = -\frac{1}{8}$$

$$E[X^2] = \frac{1}{4} + \frac{1}{8} + \frac{1}{4} = 1$$

$$\text{Var}(X) = 1 - \left(-\frac{1}{8}\right)^2 = \frac{63}{64}$$

13.

$$E[Y] = 0 + \frac{1}{2} + \frac{1}{4} = \frac{3}{4}$$

$$E[Y^2] = 0 + \frac{1}{2} + \frac{1}{4} = \frac{3}{4}$$

$$\text{Var}(Y) = \frac{3}{4} - \left(\frac{3}{4}\right)^2 = \frac{3}{16}$$

14.

$$E[XY] = -\frac{1}{2} \times \frac{1}{4} = -\frac{1}{8}$$

$$\text{Cov}(X, Y) = -\frac{1}{8} - \left(-\frac{1}{8} \times \frac{3}{4}\right) = \frac{1}{32}$$

15.  $\rho = \frac{\frac{1}{32}}{\sqrt{\frac{63}{64}} \times \sqrt{\frac{3}{16}}} = \frac{1}{3}$

16.

$$0.75 \times 0.25$$

(a)  $\text{dbinom}(1, 3, 0.75) = 0.140625$

(b)  $1 - \text{pbinom}(1, 3, 0.75) = 0.284375$

✓ Bernoulli(0.75)

17.  $\frac{X - \mu}{\sigma}$      $Y = \frac{1}{2}X + \frac{1}{2}$   
 $\mu = -1$

18.  $P(X \leq C) = P\left(\frac{X - \mu}{\sigma} \leq \frac{C - \mu}{\sigma}\right)$   
 $= P\left(\frac{X - \mu}{\sigma} \leq 1\right)$   
 $C = 1$

19. ③ 위아래  $Z_1$  검정.

20.  $\mu = 2$      $\sigma^2 = 5^2$      $n = 25$   
 $\frac{C - 2}{\frac{5^2}{25}} = C - 2$      $(Z \leq 1.96)$   
 $C - 2 = 1.96$   
 $C = 3.96$