

Q<sub>1</sub>

- a) the driving conditions.
- b) driving accuracy
- c) Single-blind. Because the driver obviously know his/her driving condition but the evaluator doesn't.
- d) Neither. These 20 drivers are not divided into groups.

Q<sub>2</sub>

No. Because for those people who have vitamins cares for their health and possibly live a healthier lifestyle than those who don't take vitamin. It is possible that they lost most weight because they have more exercise time or have diet. All those reason can be confounding variables.

Q<sub>3</sub>

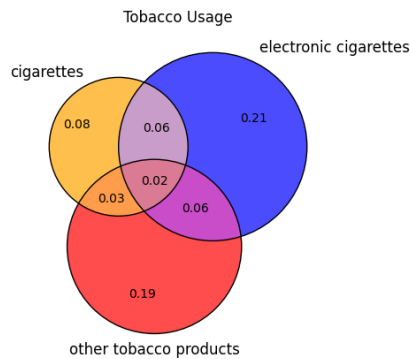
- a) random sampling. No, it will not result in bias.
- b) block. No.
- c) cluster. Yes.

Q<sub>4</sub>

- a) 16.0%
- b) None: 28.7%  
 $< 1/3$ : 36.4%  
 $1/3$  to  $2/3$ : 21.0%  
 $2/3$ : 13.9%
- c) No. After adding thorny cover, deer damage decrease as the cover area increase.

Q6.

a).



$$b) P = 1 - [(0.08 + 0.21 + 0.19 - 0.06 - 0.03 - 0.06 - 2 \times 0.02) \times 100\%] / 40\%$$

$$= 1 - 29\% / 40\%$$

$$= 27.5\%$$

$$c) P = (0.21 - 0.06 - 0.06 + 0.02) / 0.21 \times 100\%$$

$$= 12.4\%$$

$$d) P_1 = 0.03 / 0.19 \times 100\%$$

$$= 15.8\%$$

$$P_2 = 0.03 / 0.08 \times 100\%$$

$$= 37.5\%$$

Q7

a) the distribution of  $\bar{x}$  will be normal distribution.

b) 22%

c) 48%

Q8 a) negative:

-0	3 8
-1	0 0 8
-2	0 1 1 2 2 3 5 5 7
-3	0 1 3 6 8
-4	0 3 4 7 7 9 9
-5	1 2 2 3 3 6 7 9
-6	2 5 5 8 8
-7	0 8
-8	3

positive

0	2 3 4
1	7
2	2

These data does not follow normal distribution

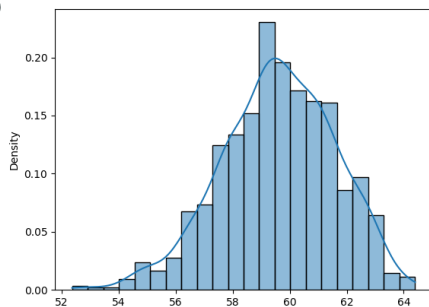
b)  $\bar{x} = -3.69$

$(2.576 \times 2.5) / \sqrt{47} = 0.94$

$0.94 / 3.69 \times 100\% = 25.47\%$

c) Yes. For the 99% confidence interval, the probability is 99%.

Q9 a)



b) the 95% confidence interval is  $[55.30, 63.12]$ .

Ancient air differs significantly from present atmosphere.