$$\sigma^2 \text{ means varience}$$

$$\sigma \text{ means standard deviation}$$

$$\sigma^2 = \frac{\sum x^2}{n} - \left(\frac{\sum x}{n}\right)^2$$

$$\sigma = \sqrt{\text{varience}}$$

Interpolation

(usually to find the median)

Lower Class Boundary $+ \left(\text{Class Width} \times \text{Fraction you want to go in} \right)$

Positive Skew

$median < mean$

Negative Skew

$median > mean$

No Skew

$symmetrical$

Correlation and Regression

The formulae are given to you.
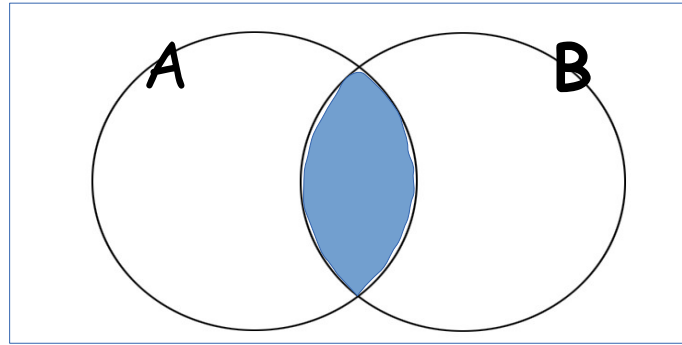
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r is a measure of a linear relationship

$r=1$ *positive correlation*

$r=-1$ *negative correlation*

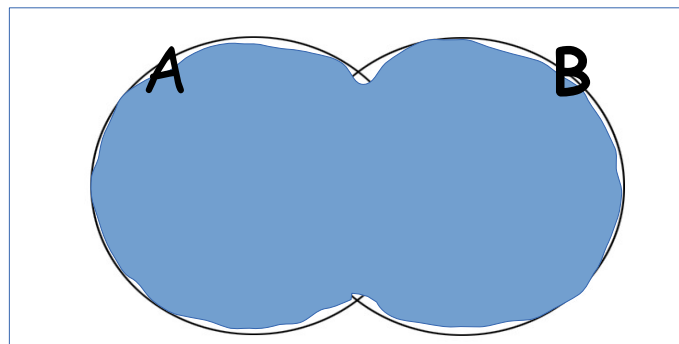$r=0$ *no correlation*

$$P(A \cap B)$$

The intersection of A and B

$$P(A \cup B)$$

The union of A and B

$$P(A \mid B)$$

The probability of A given B

$$P(A')$$

The probability of not A

Independent Events

$$P(A) \times P(B) = P(A \cap B)$$

Mutually Exclusive

$$P(A \cap B) = 0$$

Remember to use the formulae that you are given:

Discrete Random Variables

$$P(X=x)=\frac{x}{10}$$

x	1	2	3	4
$P(X=x)$	0.1	0.2	0.3	0.4

$$E(X)=(1\times0.1)+(2\times0.2)+(3\times0.3)+(4\times0.4)$$

$$E(X^2)=(1^2\times0.1)+(2^2\times0.2)+(3^2\times0.3)+(4^2\times0.4)$$

$$Var(X)=E(X^2)-(E(X))^2$$

$$Var(5X)=Var(X)\times5^2$$

$$F(X)\text{ is a cumulative distribution}$$

The Normal Distribution

Our
Number

The Mean

$$z = \frac{X - \mu}{\sigma}$$

Standard
Deviation

34.1% 34.1%

13.6%

13.6%

2.1%

2.1%

z = -3   z = -2   z = -1   Mean   z = 1   z = 2   z = 3

z = 0
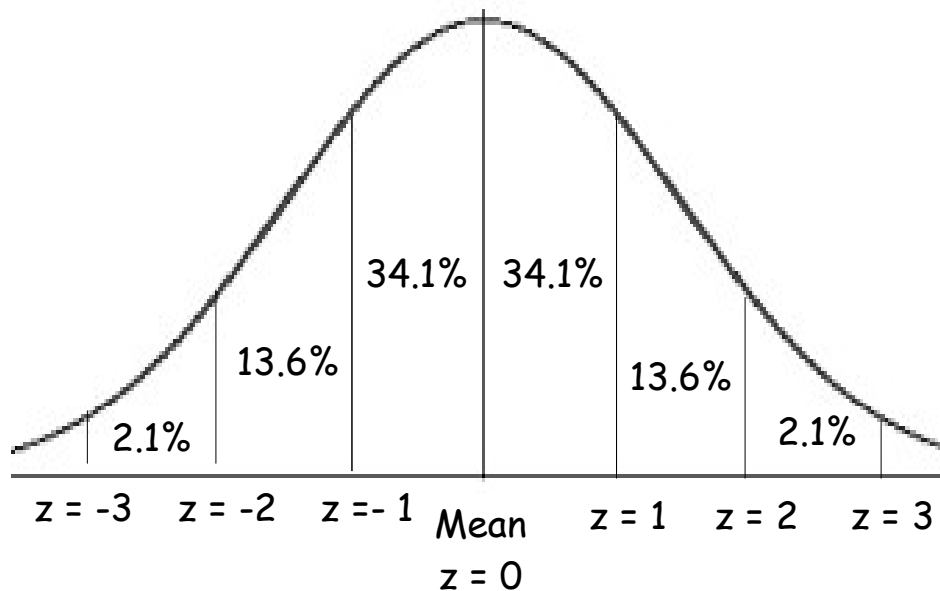
We can look up z or the probability
on the tables