

AREA OF TRIANGLE VECTOR TRIANGLE:

$$A = \frac{1}{2} \|u \times v\| \leftarrow \text{cross product}$$

PLANE EQUATION:

$$(x-h)^2 + (y-k)^2 + (z-l)^2 = R^2$$

EULER'S FORMULA:

$$F + V = E + 2$$

FACES / VERTICES / EDGES

$${}^n P_r = \frac{n!}{(n-r)!}$$

(order matters)
"Permutation"

$${}^n C_r = \frac{n!}{r!(n-r)!}$$

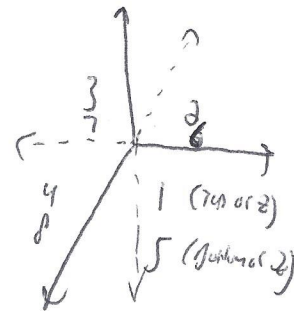
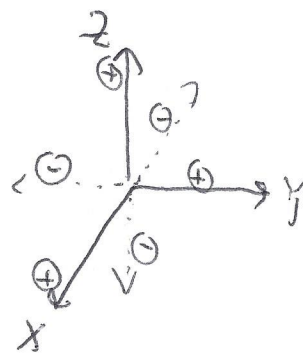
(order does not matter)
"Combination"

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

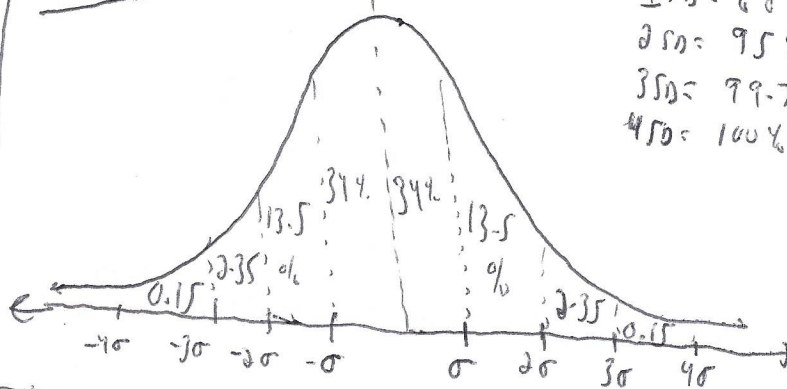
μ = population mean $\mu = 73$
 σ = standard deviation $\sigma = 14.1$
 x_i = observation $P(x \leq 70) = 5.16\%$

$$z = \frac{70 - 73}{14.1} = -1.63$$

2-tail of -1.63 = 5.16%



Standard deviation



1σ = 68%
 2σ = 95%
 3σ = 99.7%
 4σ = 100%

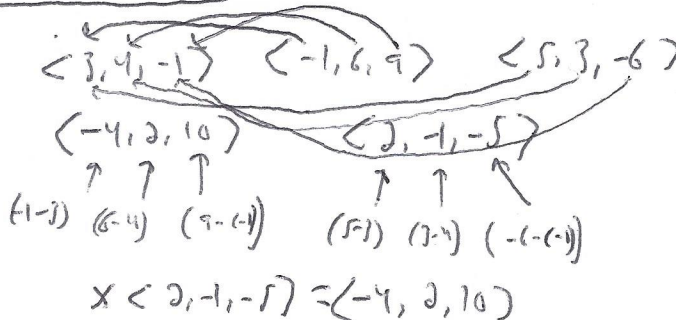
PERCENTILE

(Number of observations) (percentile) = x

- if "x" is DECIMAL, then Round UP to NEXT INTEGER, then count those VALUES from SMALLEST to LARGEST.

- if "x" is INTEGER, count values from SMALLEST to LARGEST to GET VALUE, then AVERAGE IT with the NEXT VALUE. (E.g., if integer is 5, then average the 5th & 6th values).

CUMULATIVE VECTORS



$x = -2$ ← since this works for "x", the cumulative vectors!