Test Results

A X X

B X X X X X

C X X X X X X X

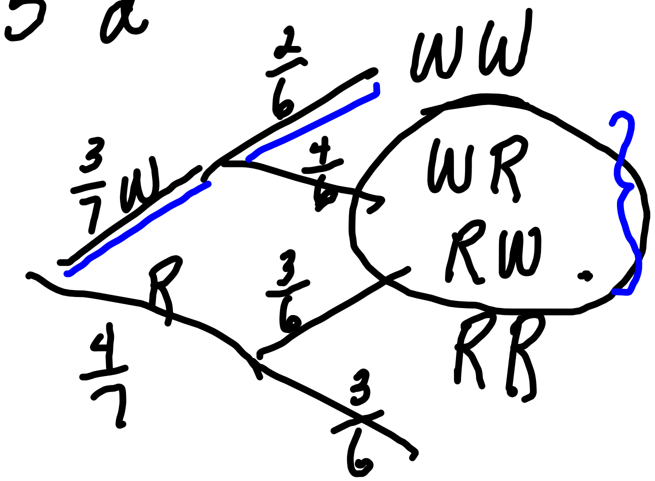
D X X X X X

F X X X X X

avg. 72

Pink 4 red, 3 white

5 d



$\frac{3}{7} \cdot \frac{4}{6} = \frac{2}{7} \approx .2857$

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.5714

c) both are white:

$P(\text{both } W) = \frac{3}{7} \cdot \frac{2}{6} = \frac{1}{7} \approx .1429$

(10)

$1 - 0.9912 = 0.0088$

x($)	P(x)	xP(x)
$10,000	0.9912	9912
-990,000	0.0088	-8712

$\sum xP(x) = \$1200$

$\mu = \sum xP(x)$ ∴

6

Prob

	Aid	No Aid	
Male	90	160	250
Fem	100	250	350
	190	410	600

a) $P(RA) = \frac{190}{600} \approx .3160$

b) $P(M \,\&\, RA) = \frac{90}{600} \approx .15$

c) $P(RA \mid M) = \frac{90}{250} \approx .36$

d) $P(M \mid RA) = \frac{90}{190} \approx .4737$

e) $P(RA) = P(RA \mid M)$

$.3160 \neq .36$

$\therefore$ These are not independent

(8) pink

a) ${}_nC_x\, p^x q^{n-x}$ binomial distribution

$\frac{7!}{3!\,4!} = \frac{7\cdot 6\cdot 5}{3\cdot 2} = 35$

$P(x=3) = {}_7C_3 \; .2^3 (.8)^4$

$= 35(.2)^3(.8)^4$

$\approx .1147$

only for exact

b) $P(x=3) =$ binompdf$(7, .2, 3)$

$\approx .1147$

(5) Blue

4 red 5 white

b) $P(2^{nd}\, W \mid 1^{st}\, W) = \frac{4}{8} = \frac{1}{2} = .5$

c) $P(W\,W) = \frac{5}{9} \cdot \frac{\cancel{4}\,1}{\cancel{8}\,2} = \frac{5}{18} \approx .2778$

d $P(\text{one of each})$

$$WR = \frac{5}{9} \cdot \frac{\cancel{4}\,1}{\cancel{8}\,2} = \frac{5}{18}$$

$$RW = \frac{4}{9} \cdot \frac{5}{8} = \frac{5}{18}$$

} .5556

(11) Pink's

c)

$p = .40$

$n = 10$

$P(x \geq 6) = \text{binomcdf}(10, .4, 10) - \text{binomcdf}(10, .4, 5)$

$\approx .1662$

.1023624

Rounded .1024

.1023 truncating

.1099506

Rounded .1100

(1) Pink $p = .40$

d)

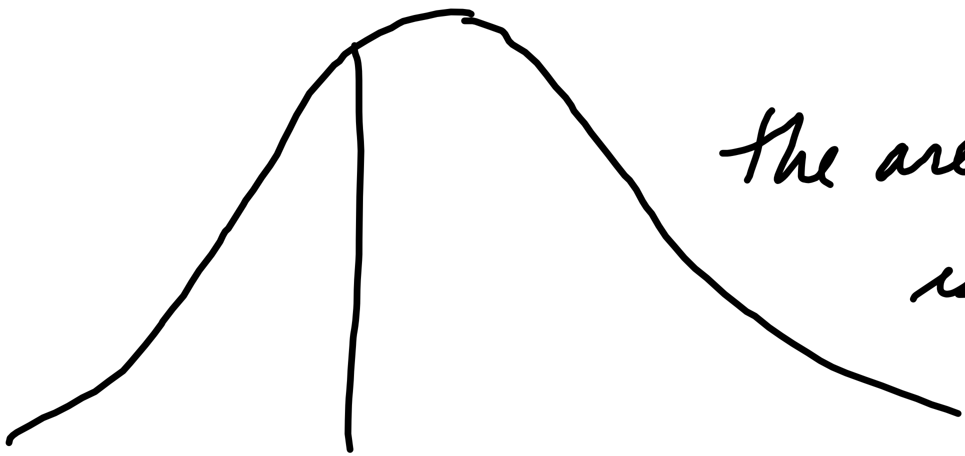
d) $P(4 \le x \le 6) = \text{binomcdf}(10, .4, 6) - \text{binomcdf}(10, .4, 3)$

$\approx .5630$

e) $P(x < 2) = \text{binomcdf}(10, .4, 1)$

$\approx .0464$

Chapter 6 – Continuous Random Variables



the area of a line is zero

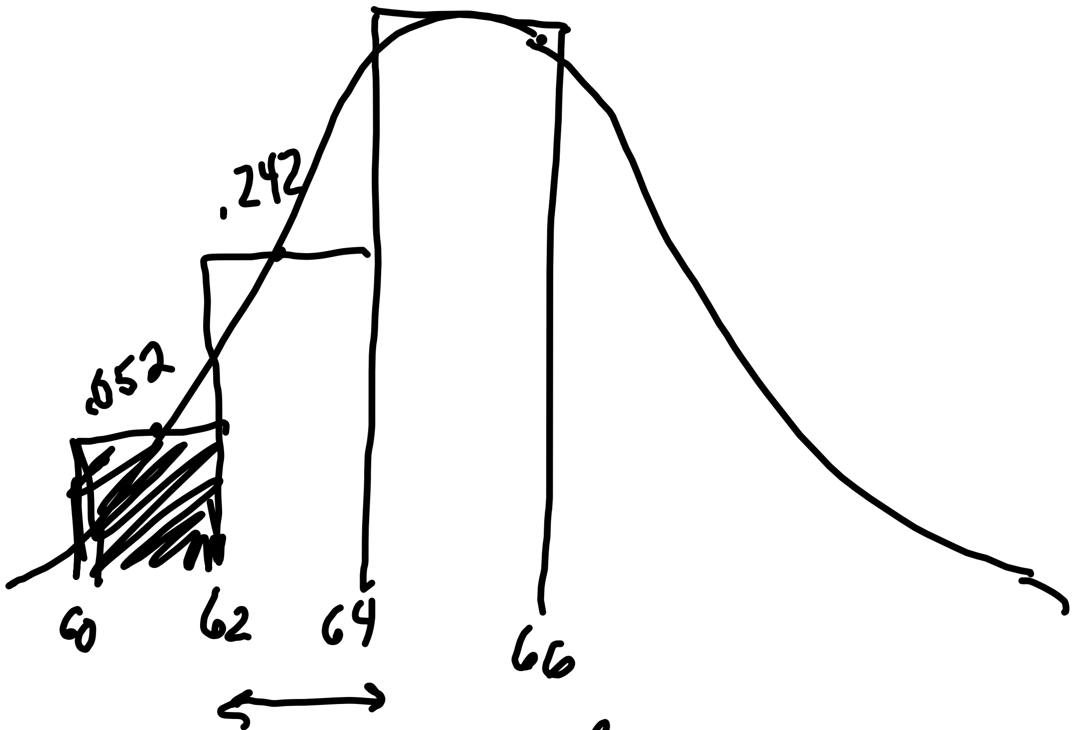
$x = a$

area = 0

$P(a < x < b)$ ←

or $P(a \le x \le b)$

probability density function



2 = width

$2(.052) + 2(.242) + 2($

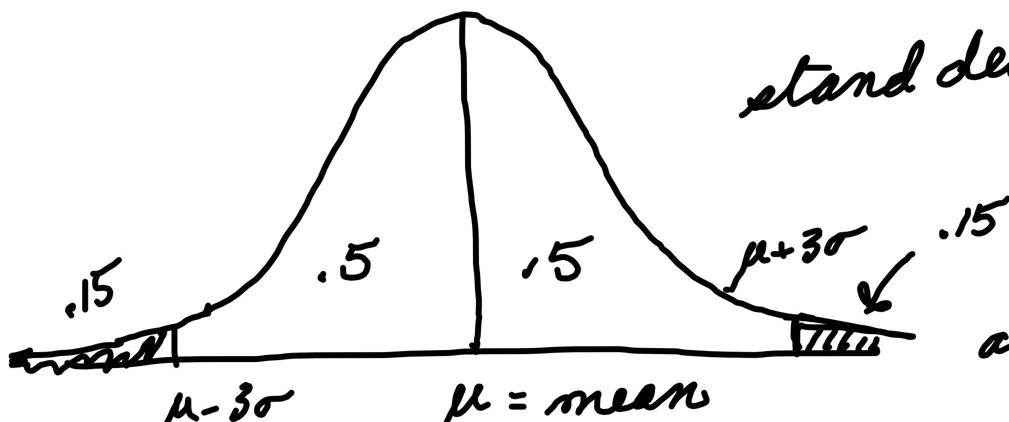
result = 2 oops

6.2 Use most

Normal Probability Distribution
(Normal Curve)

NORMAL RANDOM VARIABLE

stand dev σ



asymptote

From $\mu-3\sigma$ to $\mu+3\sigma$ = 99.7 %

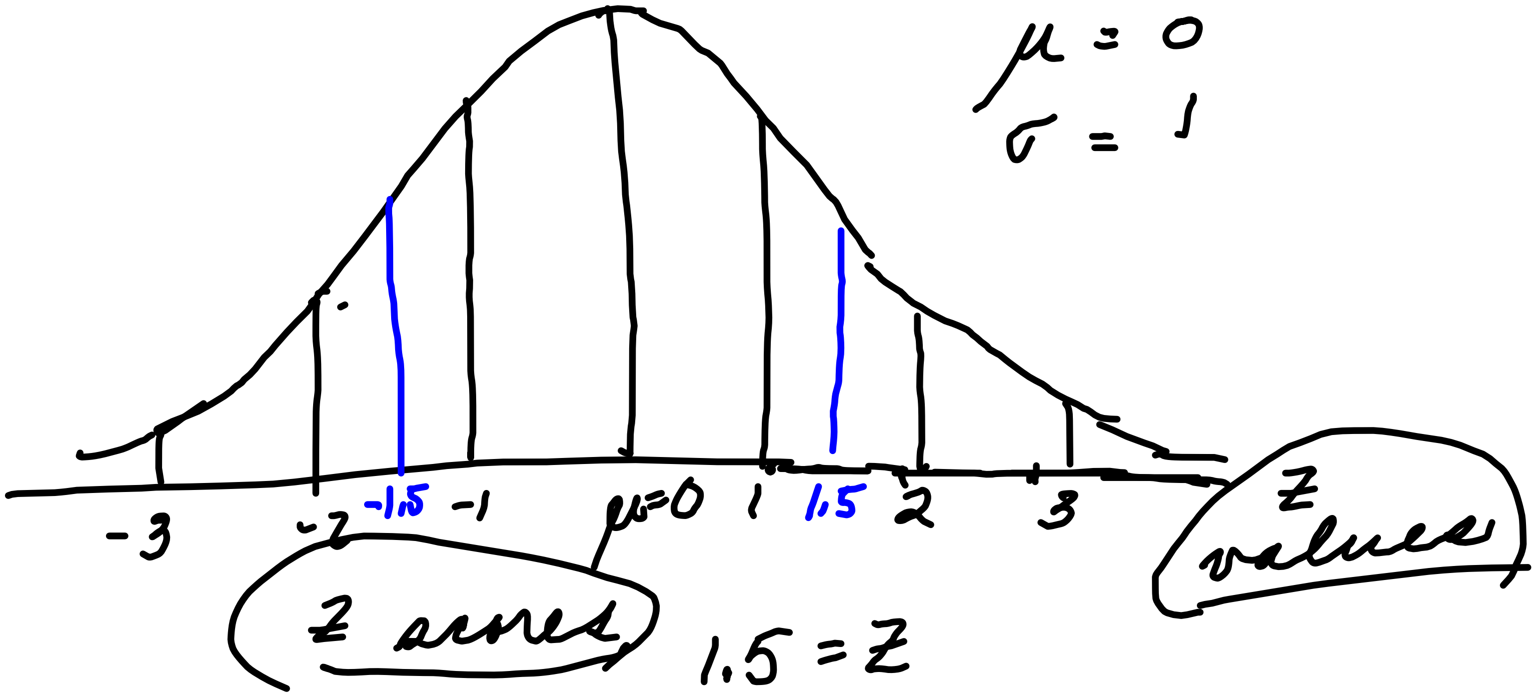
1- 99.7 = .3

$$\frac{.3}{2} = .15$$

6.3 The Standard Normal Distribution

$\mu = 0$

$\sigma = 1$



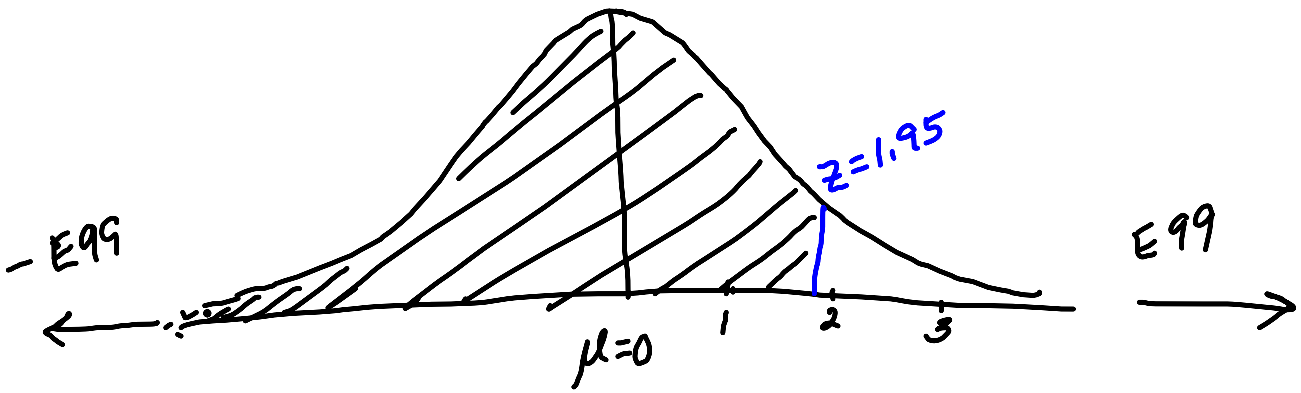
$1.5 = Z$

Z scores are the # of standard deviations above or below the mean

$z = 3$ 3σ above μ

ex. Find the probability that $Z < 1.95$

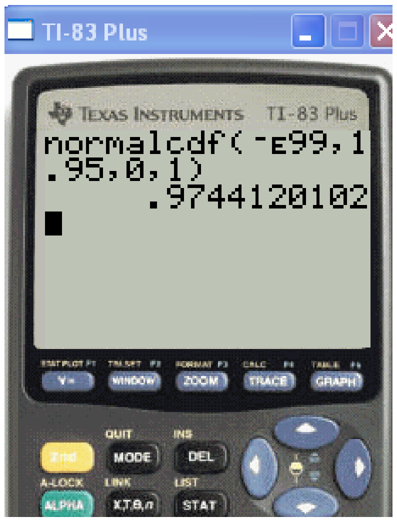
What does this mean?



The $P(Z < 1.95) = \text{normcdf}(\text{low}, \text{high}, \mu, \sigma)$

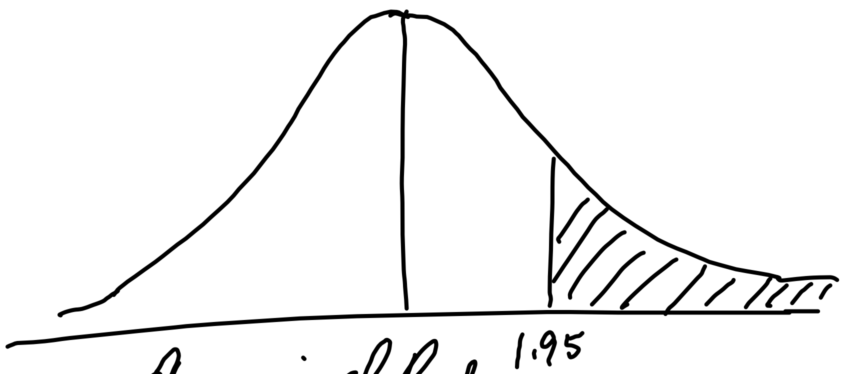
$= \text{normdf}(-E99, 1.95, 0, 1)$

$\approx .9744$



$P(z > 1.95) = \text{normalcdf}(1.95, E99, 0, 1)$ (σ)

$\approx .0256$



Emperical Rule

68%

$P(-1 < z < 1) = \text{normalcdf}(-1, 1, 0, 1)$

$\approx .6829$

$P(-2 < z < 2) = \text{normalcdf}(-2, 2, 0, 1)$

$\approx .9545$

$P(-3 < z < 3) = \text{normalcdf}(-3, 3, 0, 1)$

$\approx .9973$