WARM UP

Perform Currency conversions

between international currencies

Your own NOTES

For the next 3 days there will be no recording sheet

[turn in 4 assignments as a packet]

4 point score each day!

Currency conversions

CURRENCIES

currency exchange rates quoted by the Commonwealth Bank on Jul 13

	Bank buys	Bank sells		Bank buys	Bank sells
US dollar	0.7303	0.7216	Malta lira	0.2534	0.2443
Europe euro	0.5933	0.5769	NZdollar	1.1087	1.0826
UK pound	0.3935	0.3851	Norway kroner	5.0118	4.8797
Canada dollar	0.9665	0.9432	Pakistan rupee	n/a	n/a
China renminbi	n/a	n/a	PNG kina	n/a	2.0261
Denmark kroner	4.4034	4.2874	Philippines peso	n/a	38.538
Fiji dollar	n/a	1.2359	Singapore dollar	1.2462	1.209
Fr Pacific franc	71.51	67.56	S Africa rand	4.5082	4.2725
Hong Kong dollar	5.7386	5.5579	Sri Lanka rupee	76.13	70.06
India rupee	33.67	32.068	Sweden krona	5.4512	5.3076
Indonesia rupiah	n/a	n/a	Switzerland franc	0.8998	0.8761
Japan yen	79.45	77.35	Thailand bant	30.09	27.56
Malaysia ringgit	n/a	n/a	Vanuatu vatu	n/a	79.55

1 GBP = 1.80 USD

Is it true ....

there are 7 days in 1 week ?

$\frac{1 \text{ week}}{7 \text{ days}}$ $\frac{7 \text{ days}}{1 \text{ week}}$

1 GBP = 1.80 USD

As with all rates, they can be written in two ways:

$\frac{1 \text{ GBP}}{1.80 \text{ USD}}$ or $\frac{1.80 \text{ USD}}{1 \text{ GBP}}$

złoty

1 GBP = 1.80 USD

As with all rates, they can be written in two ways:

$\frac{1 \text{ GBP}}{1.80 \text{ USD}}$ or $\frac{1.80 \text{ USD}}{1 \text{ GBP}}$

So... $1700 \text{ USD} \times \frac{1 \text{ GBP}}{1.80 \text{ USD}} = 944.44 \text{ GBP}$

złoty

example 2

1. If $1 Canadian buys $5.706 Hong Kong, how many Hong Kong dollars could be bought for $1250 Canadian?

$$1250\,Can \bullet \frac{5.706\,HK}{1\,Can} = \$7132.50\,HK$$

or

7133 HK

example 2 $1250\,Can \bullet \frac{5.706\,HK}{1\,Can} = 7132.50$

1. If $1 Canadian buys $5.706 Hong Kong, how many Hong Kong dollars could be bought for $1250 Canadian?

7133 HK

or 7132.50 HK

$$1250\,Can \bullet \frac{5.706\,HK}{1\,Can} = \$7132.50\,HK$$

Commission

Another means for making profit from currency exchange is to charge a commission for exchanging currencies. This amounts to either a fixed amount or a percentage of your initial amount being charged before the currency is exchanged.

example 3

If $800 is exchanged into GBP at the rate mentioned above and the bank charges 2.5% commission, calculate the amount received in GBP.

(1) 2.5% of 800 = (.025)(800) = $20

(2) Have 800 − 20 = 780 to exchange

So $780 \text{ USD} \times \frac{1 \text{ GBP}}{1.80 \text{ USD}} = 433.33 \text{ GBP}$ or 433 GBP

example 3

If $800 is exchanged into GBP at the rate mentioned above and the bank charges 2.5% commission, calculate the amount received in GBP.

2.5% of 800

First, calculate the commission

$= 800 \times (.025) = \$20$

Then, apply the exchange rate on how much you left

800 − 20 = 780 USD

$780 \text{ USD} \times \frac{1 \text{ GBP}}{1.8 \text{ USD}} = 433 \text{ GBP}$

433.33

As far as HW (Three IB Questions)

- Study the Solutions
- Ask Questions

Pick up a half-index card. Then find your pulse.

Today:

Start Normal Distribution

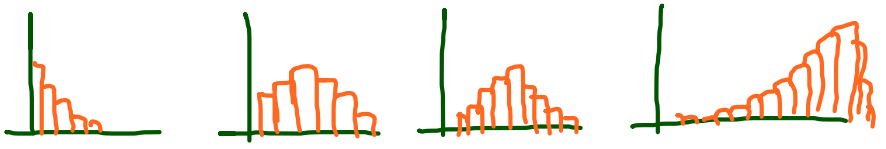
Everyone find your pulse

Multiply by 3

Write down your pulse rate

(beats per minute)

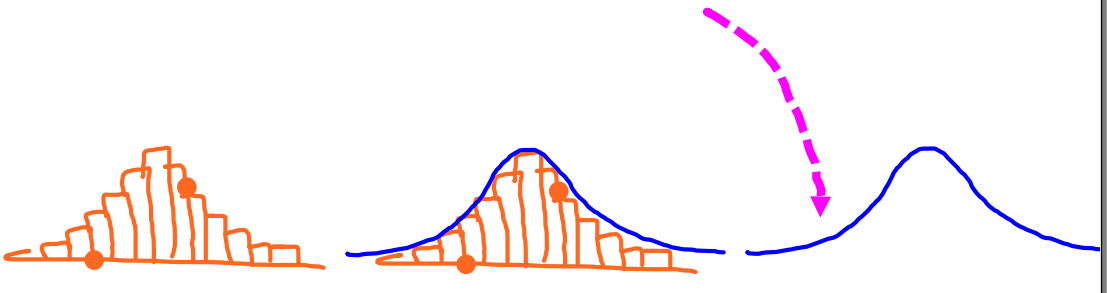
Give your card to our statistician.



There are many distributions that characterize natural phenomena in the world

One of the most common is called the Normal Distribution

The graph of a normal distribution is called a normal curve



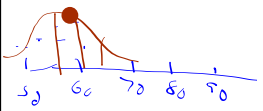
Things that closely follow a Normal Distribution:

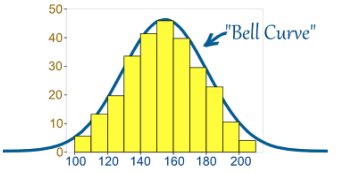
- heights of people
- size of things produced by machines
- errors in measurements
- blood pressure
- marks on a test

Today's Aim:

Be able to construct diagrams

of Normal Distributions

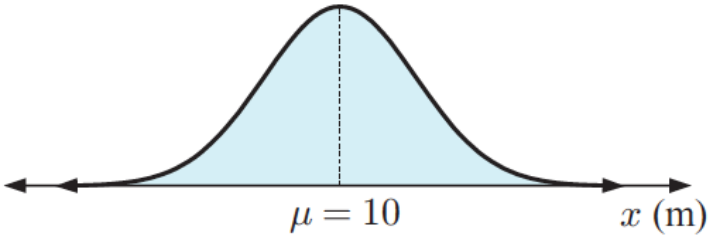




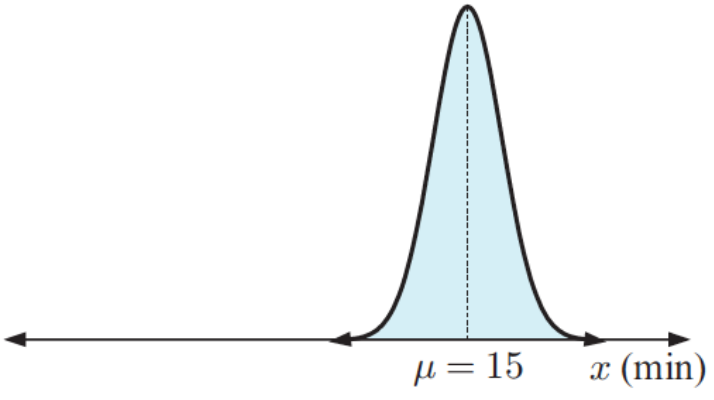
But first a visit from Hans Rosling

examples

The height of trees in a park is normally distributed with mean 10 metres and standard deviation 3 metres.



The time it takes Sean to get to school is normally distributed with mean 15 minutes and standard deviation 1 minute.



My favorite thing about

the Normal distribution

is its proportions

$\bar{x}$ s

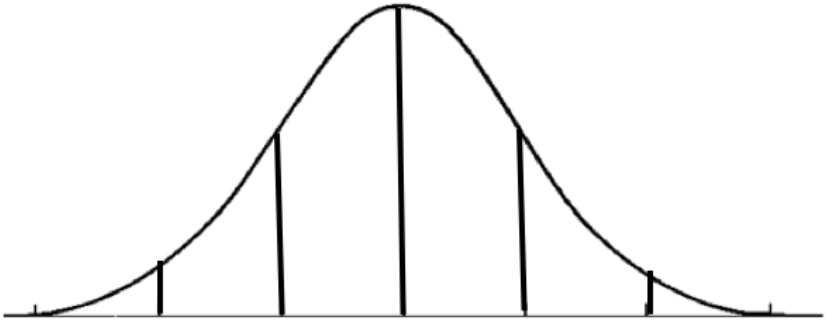
You'll need to recall two symbols

μ mean (population)

σ Stand deviation (pop)

WHAT'S NORMAL?

A normal curve is symmetric about the mean and has a bell shape.



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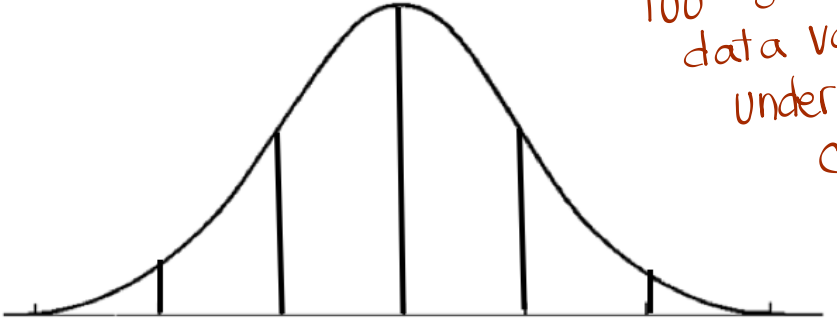
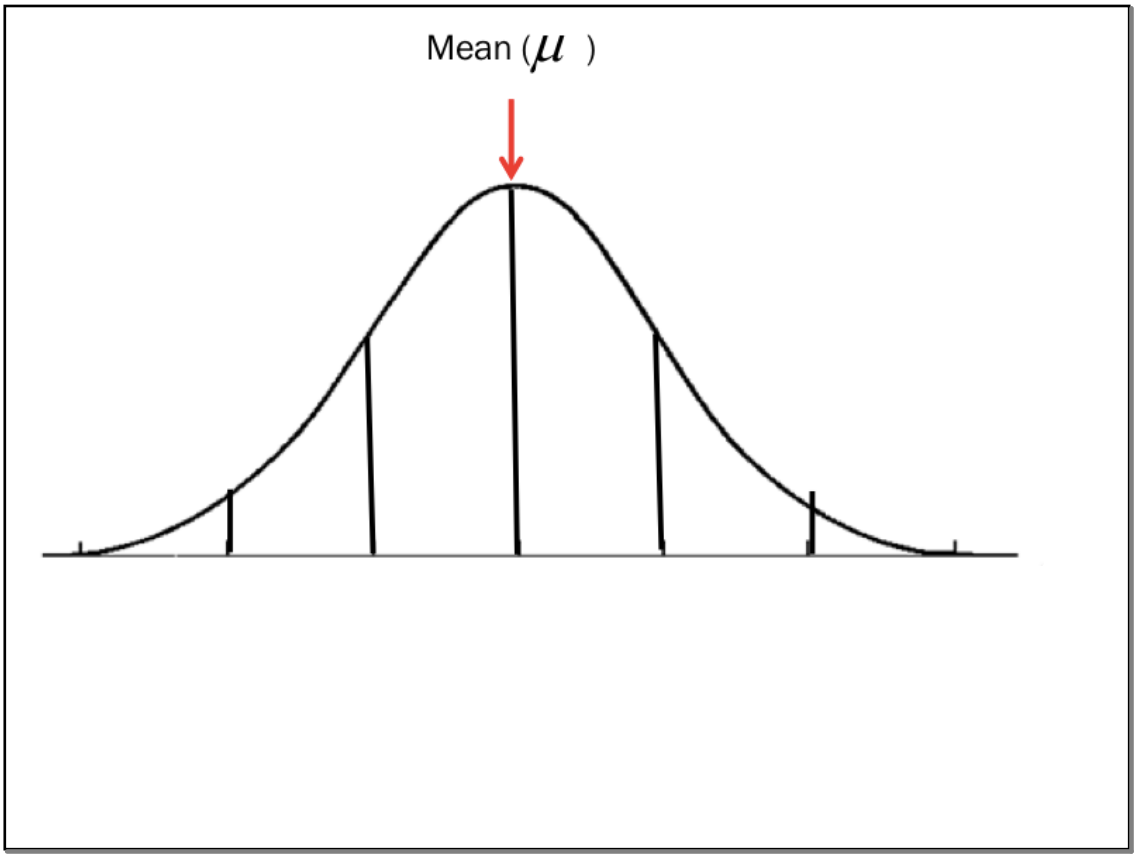
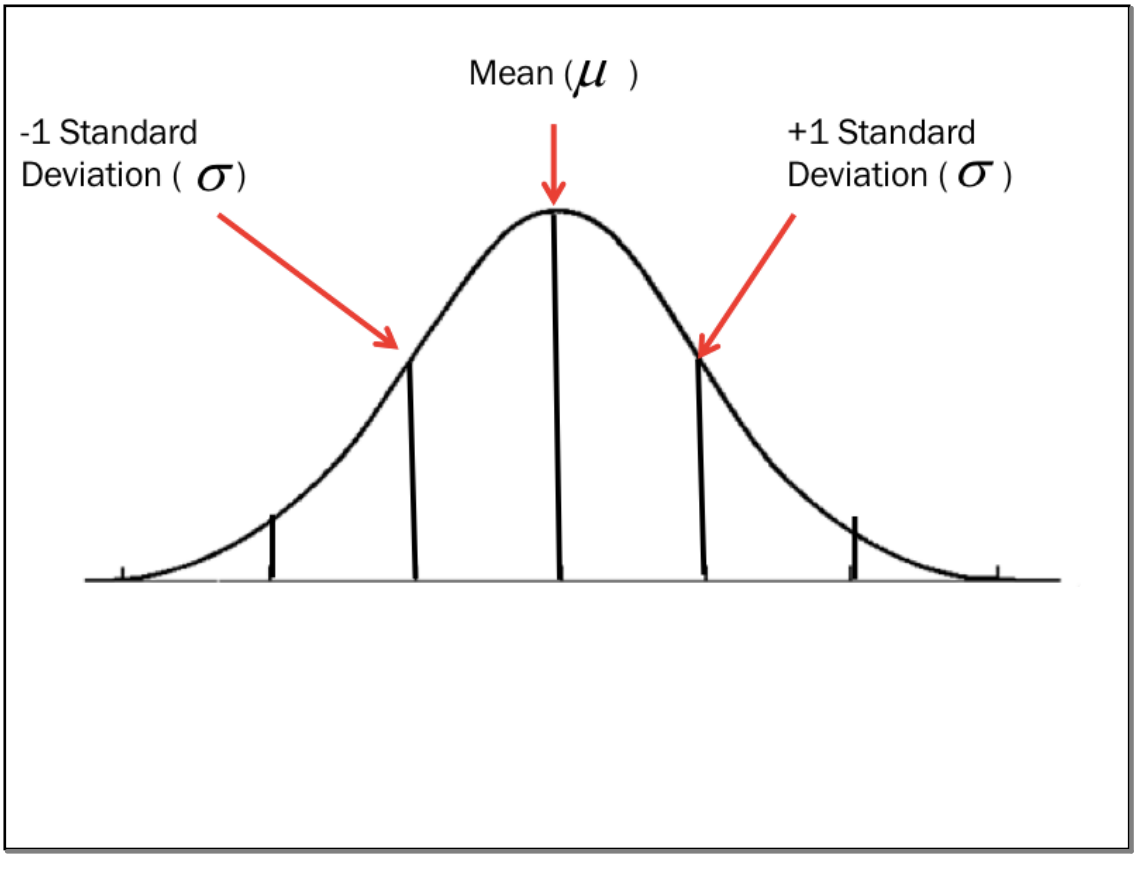
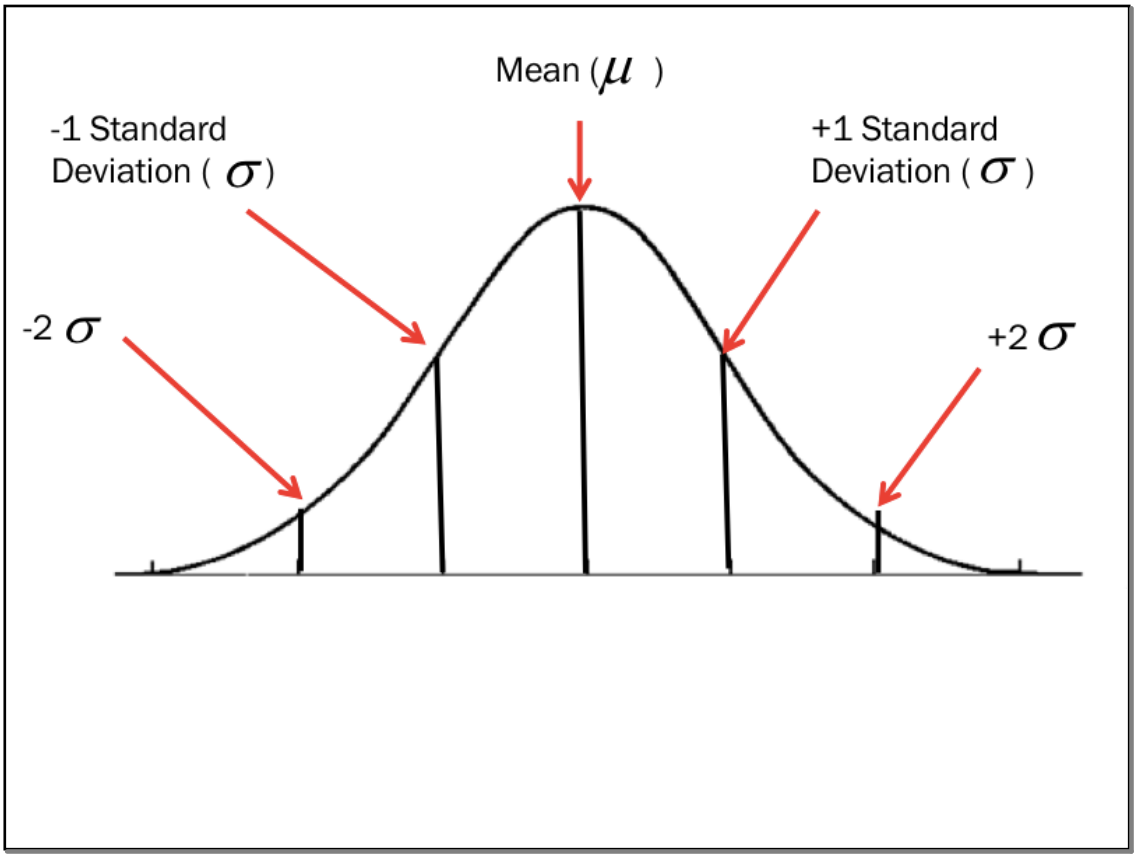
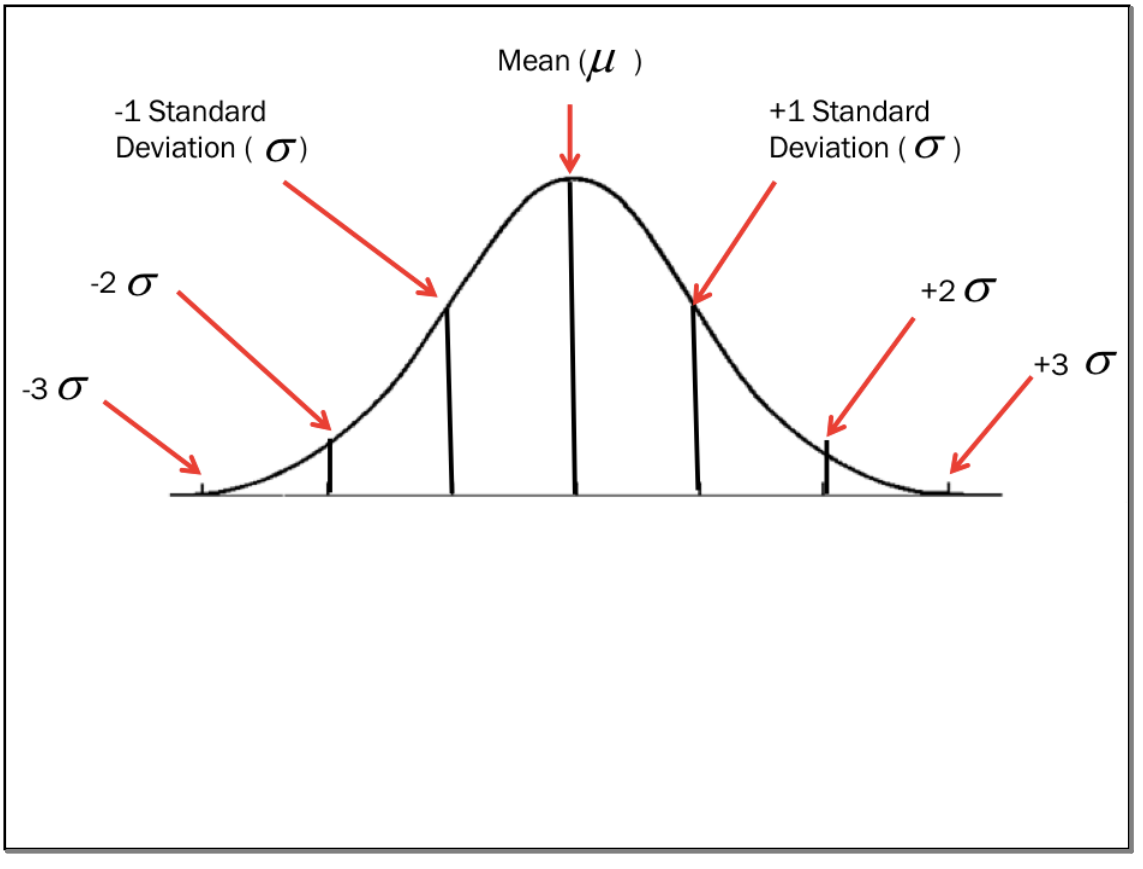


100% of data values under the curve


Mean (μ)


Mean (μ)
-1 Standard Deviation (σ)
+1 Standard Deviation (σ)


Mean (μ)
-1 Standard Deviation (σ)
+1 Standard Deviation (σ)
-2 σ
+2 σ

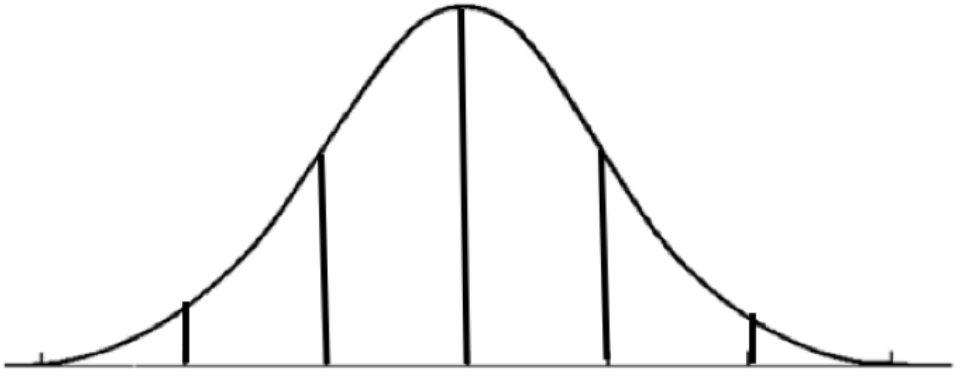

Mean (μ)
-1 Standard Deviation (σ)
+1 Standard Deviation (σ)
-2 σ
+2 σ
-3 σ
+3 σ

EMPIRICAL RULE

EMPIRICAL RULE

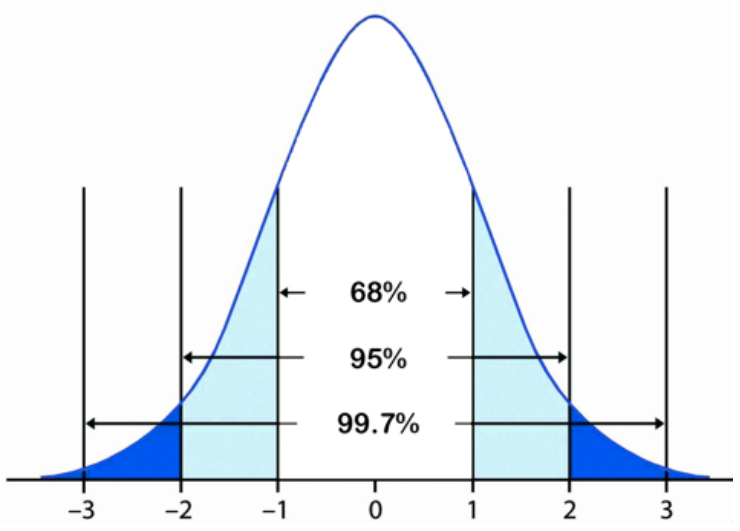
NOTES

In a normal distribution with mean μ and standard deviation σ:



standard deviations (σ)

In a normal distribution with mean μ and standard deviation σ:

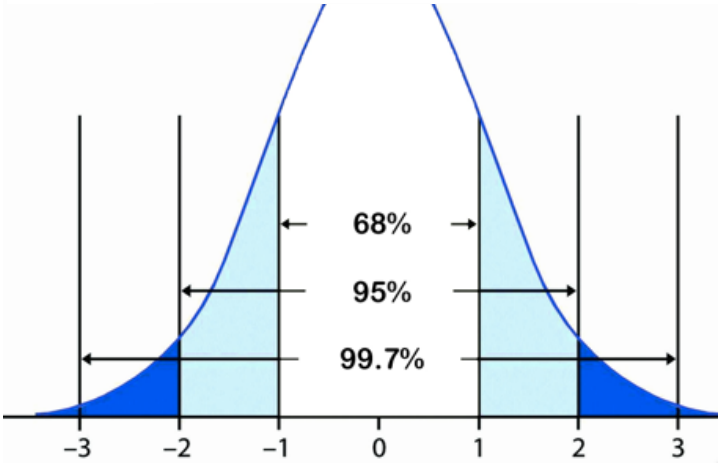


In a normal distribution with mean μ and standard deviation σ:

68% of the data fall within σ of the mean μ.

95% of the data fall within 2σ of the mean μ.

99.7% of the data fall within 3σ of the mean μ.



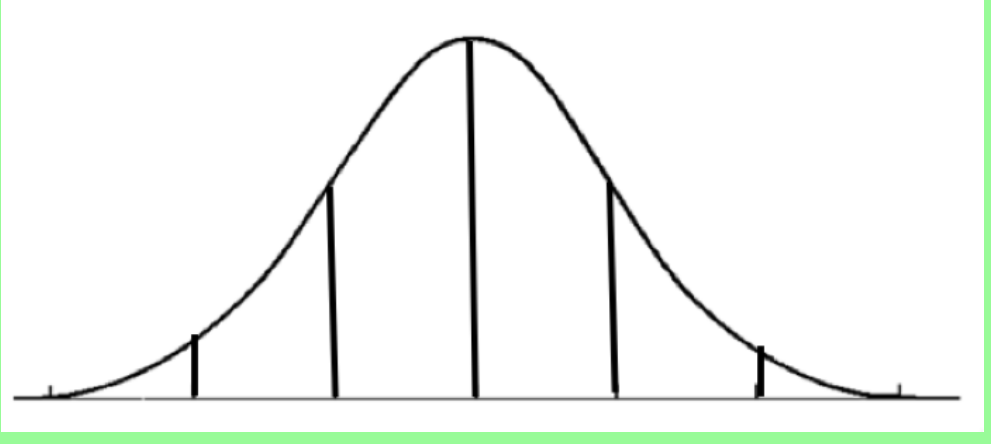
This relationship is know as the.....

Emperical Rule

68% - 95% - 99.7%

and in some places.....

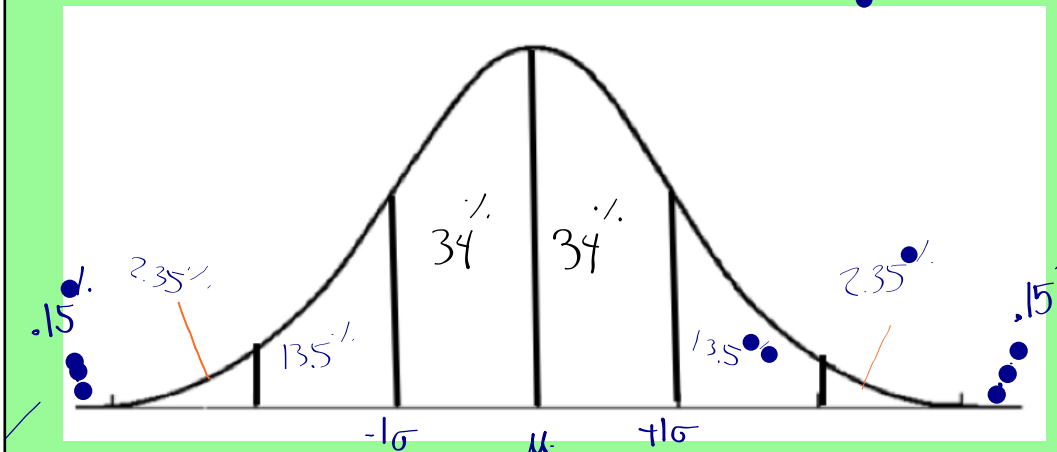
NOTES



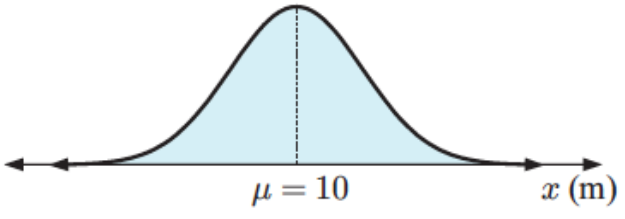
68 - 95 - 99.7

NOTES Label each section with %

68-95-99.7



The height of trees in a park is normally distributed with mean 10 metres and standard deviation 3 metres.



S σ

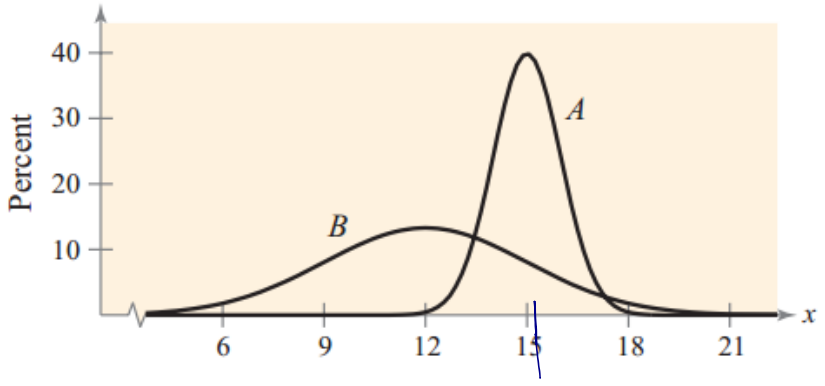
S^2 σ^2

notation $X \sim N(\mu, \sigma^2)$

for the trees $X \sim N(10, 3^2)$

Which normal curve has a greater mean?

Which normal curve has a greater standard deviation?



Our Pulse rates as a Normal Distribution

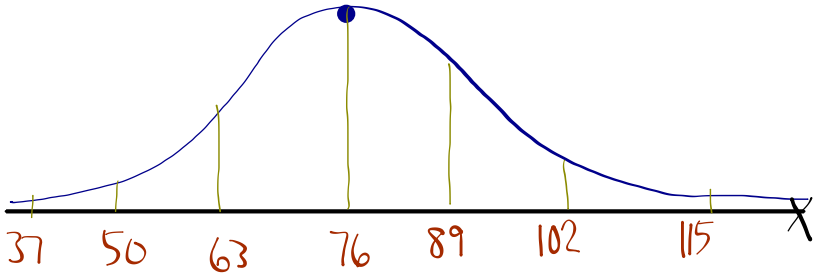
Per 3 PULSE Rates

$\mu = 76$ beats/min

$\sigma = 13$ beats/min

$P(X > 89) = 16.0\%$

$P(50 < X < 76) = 47.5\%$

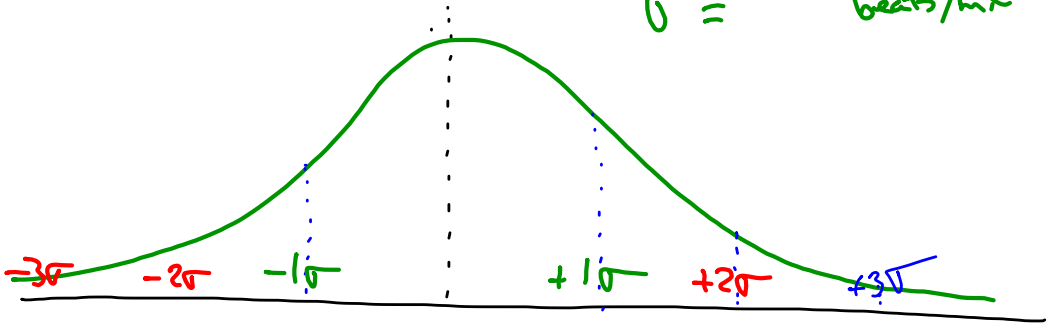


Pulse Rates (bpm)

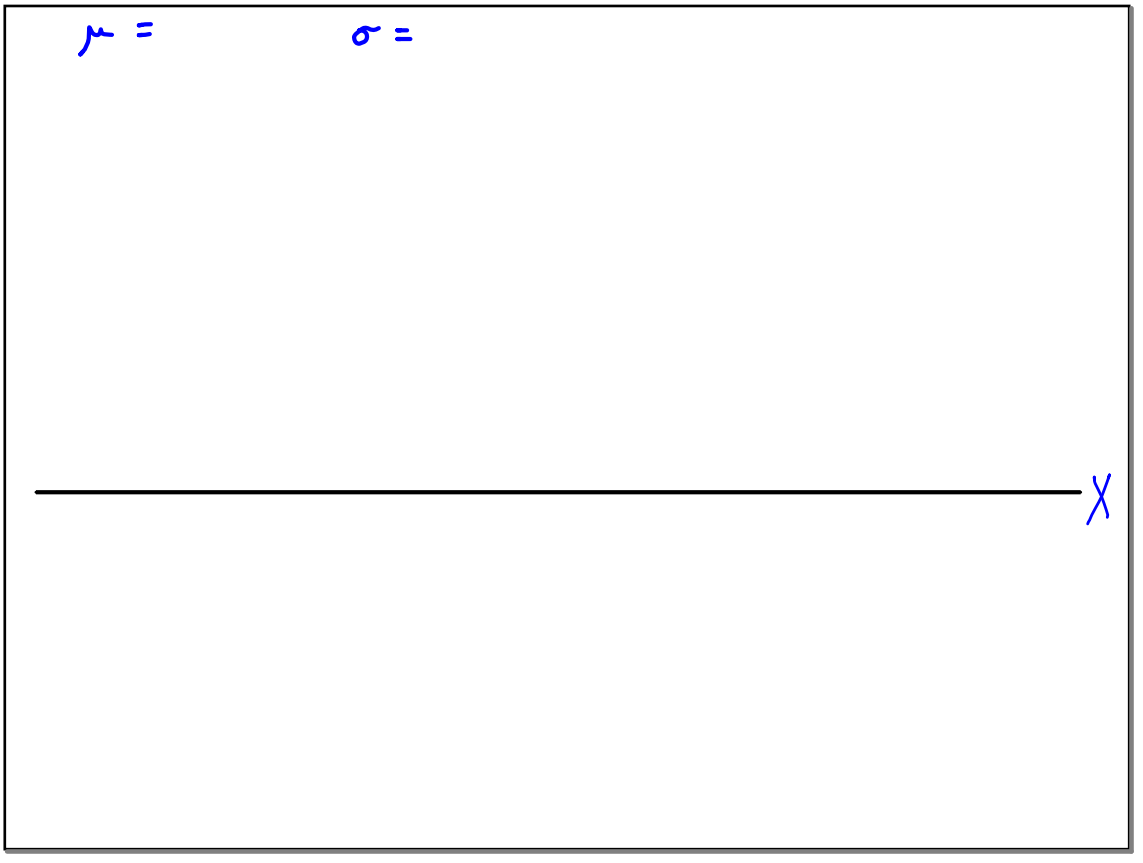
Per 3 PULSE Rates

$\mu =$ beats/min

$\sigma =$ beats/min



Pulse Rates



What are the chances that someone in the class has a pulse rate

greater than 71 bpm

less than 84 bpm

more than 97

between 58 and 84

You will now be given a Normal Distribution Packet which we will use over the next three days

In your notes

On page 303....#3

Draw and Label a **Large** Normal Distribution diagram

3 The mean height of players in a basketball competition is 184 cm. If the standard deviation is 5 cm, what percentage of them are likely to be:

a taller than 189 cm

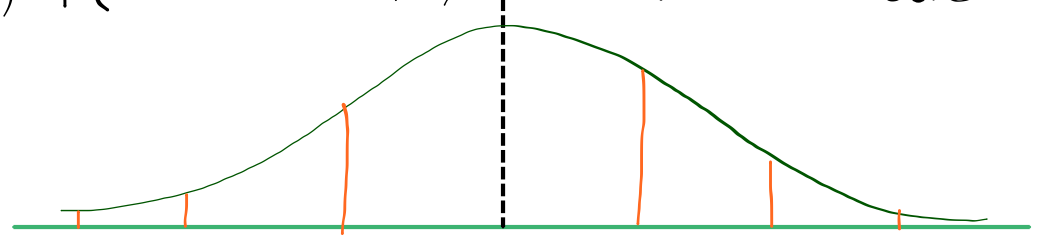
b taller than 179 cm

c between 174 cm and 199 cm

d over 199 cm tall?

a) $P(X > 189) = 16.0\%$ b) $P(X > 179) = 84.0\%$

c) $P(174 < X < 199) = 97.4\%$ d) $P(X > 99) = 0.15\%$



3 a 15.9% b 84.1% c 97.6% d 0.13%

Assignment

- **Worksheet on Review of Functions**
- **Complete all of it by tomorrow**

4 The mean average rainfall of Claudona for August is 48 mm with a standard deviation of 6 mm. Over a 20 year period, how many times would you expect there to be less than 42 mm of rainfall during August in Claudona?