Bad part about odds: probability has to be a fraction

Odds:

The odds for rain today are 3:5.

A) What does this mean?

3 chances for rain
5 chances Against rain

B) What are the odds against rain?

5:3

C) What is the probability for rain?

Probability
$\frac{\#\text{ for}}{\text{total }\#}$

odds
#for : # against

$\frac{3}{5+3} = \frac{3}{8}$

The probability that Jill will turn down Fred when he asks her out on a date is .45. What are the odds that Fred gets a date?

.45 => $\frac{9}{20}$ 9 chances against, 11 chances for

11:9

The odds that the "party patrol" will bust Matt's party are 7:12. What is the probability that Matt's party won't be busted.

7: for
12: against

prob = $\frac{12}{7+12} = \frac{12}{19}$

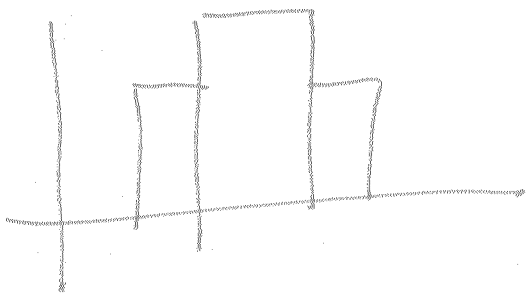
Section 8.3

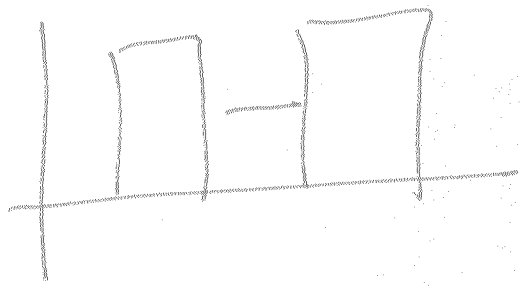
Standard Deviation: This is used to describe how data is distributed about the mean. The closer to the mean the data is, the smaller the value for σ.

The best way to find this is to use the calculator.

- Entering data: Press stat, hit enter, $x \rightarrow L_1$, $P(x) \rightarrow L_2$

Press stat, $\rightarrow$ to calc, hit enter, 2^{nd} L_1, a comma, and 2^{nd} L_2

A) 

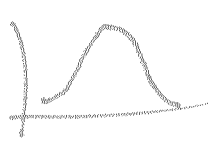
B) 

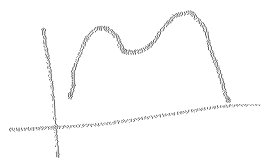
Which of the above has the Largest Variance?

ans: Variance = (Std dev)^2

So it is the same ans for Both Variance + Std dev.

these measure spread, the Largest spread = Largest std dev.

A) 

B 

ans is B it is more spread out.

The amount of time that a shopper waits in a check out line is normally distributed with an average wait time of 2 minutes with a standard deviation of 30 second. Find the following probabilities:

a) The probability that a shopper waits less than 1 minute

b) The probability that the shopper waits between 1 and 2 minutes.

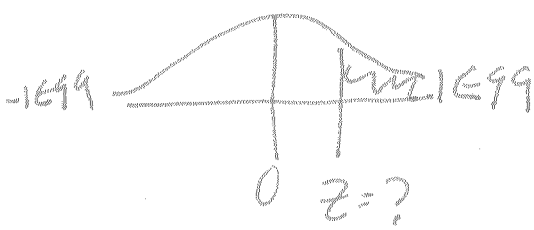
c) Find the time required so that 30% or fewer of the shoppers wait in line.

Find the following:

normalcdf(-1E99,1.35,0

a) $P(Z \leq 1.35) =$

b) $P(Z > z) = .025$



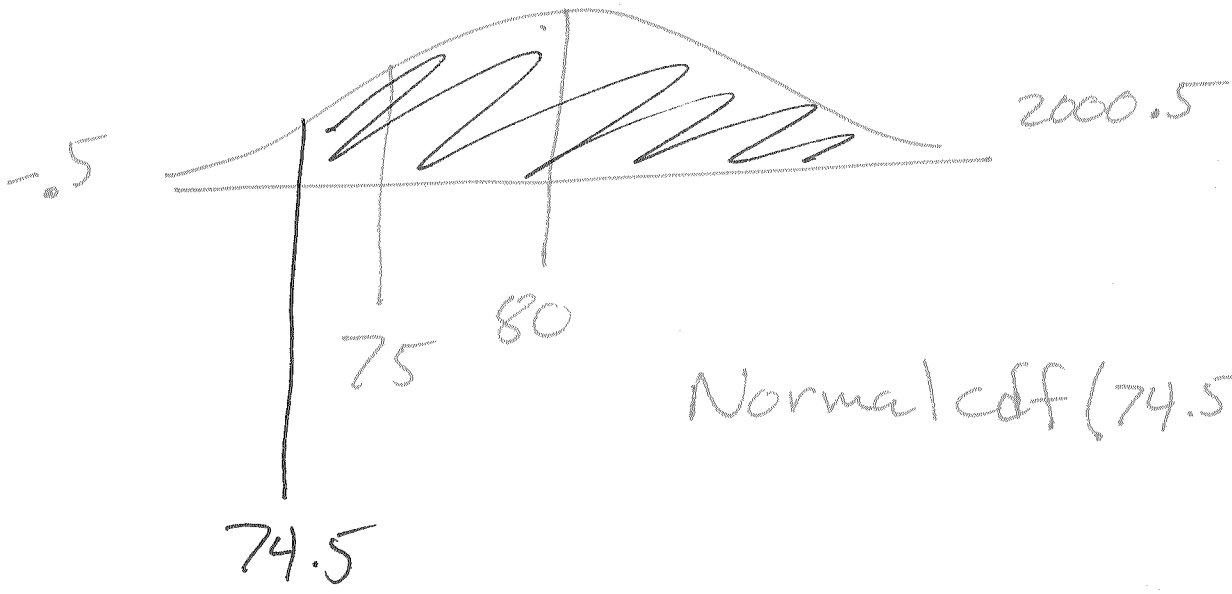
InvNorm(1-.025,0,1)

area must be shaded left so 1- right area

It has been estimated that 4% of the population still suck their thumbs when they are alone. If a sample of 2000 people are chosen at random, what is the probability that 75 or more still suck their thumbs?

Mean = $n \cdot p = 2000(.04) = 80$

Std dev = $\sqrt{n \cdot p(1-p)} = \sqrt{2000(.04)(1-.04)} = 8.764$



Normalcdf(74.5, 2000.5, 80, 8.764)

Use ~~75~~ 74.5 because 75 or more includes 75