

### Libraries to Import

<code>library(tidyverse)</code>	<code>library(broom)</code>
<code>library(mosaic)</code>	<code>library(dplyr)</code>

### Block 2 Quiz 1

mutually exclusive	two cannot be concurrent
independent	no relevance/influence between 2 factors
complement	opposite
<code>rbinom(# of trials, # of attempts within trial, success rate) mean(results &gt; amt)</code>	returns probability of success that the amt is exceeded
<code>mean(rbinom(simulatedTrials, #ofAttempts, successRate))</code>	
<code>favstats(results)</code>	finding 3rd quartile of probability

`quantile(results, 0.75)`

`qbinom(0.75, size = #ofAttempts, prob = successRate)`

`choose(n, k)` n choose k. different ways for result

### Block 1 GR

Categorical	non-number
Numerical	can be categorized by number
continuous	non-whole #
discrete	whole #
stratified sampling	some of all groups

### Block 1 GR (cont)

cluster sampling	one group, all variables
simple random sampling	random selection across all groups

observational study not experimenting

retrospective study data collected after the fact

prospective study data collected during event

skew tail is what skew it is

`favstats(colforeach~thiscol, data = dataSet)` returns min, max, SD, mean, median

explanatory variable x  
response variable y

independence has no trend

`tally(~col1+col2, data = dataSet, format = "percent/decimal")` % of the dataset that applies to both

`tally((colforeach~thiscol, data = dataSet, format = "percent", margin = TRUE))` of col1, how many also in col2?

`dataSet%>% gf_props(~Survived, fill = ~Pclass, position = "fill")%>% gf_labs(title = "", subtitle = "", x = "", y = "")%>% gf_theme(theme_bw())`

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`dataSet%>%`



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### Block 2 Quiz 2

`pnorm(value, mean mu, stdev)` returns CDF of normal distribution

Probability of randomly selecting within a range upper bound `pnorm` - lower bound `pnorm`

`qnorm(percentile value, mu, stdev)` returns percentile of dataset

`integrate(function(x)- {functionInfo}, lowerBound, upperBound)$value`

Integrate

`adaptIntegrate(function, lowerLimit = c(lowerBound, lowerBoundY), upperLimit = c(upperBoundX, upperBoundY))$integral`

integrate with 2 variables

$Cov(X,Y) = E(XY) - E(X)E(Y)$

covariance

$Cov(X,Y) = 0$

Independence

CDF

cumulative density function. probability that a random variable will take on a value  $\leq$  given value. integral of PDF

PDF

probability density function. probability that a random variable will take on a given value. derivative of CDF.

### Block 2 Quiz 2 (cont)

`rexp(# of trials, mu) + 1 ///` exponential distribution  
`mean(results < givenN-umber)`

`pexp(xValueNumber, rate = mu)` exponential distribution

### Block 3

`lm()` im not done with this!

bootstrapping



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