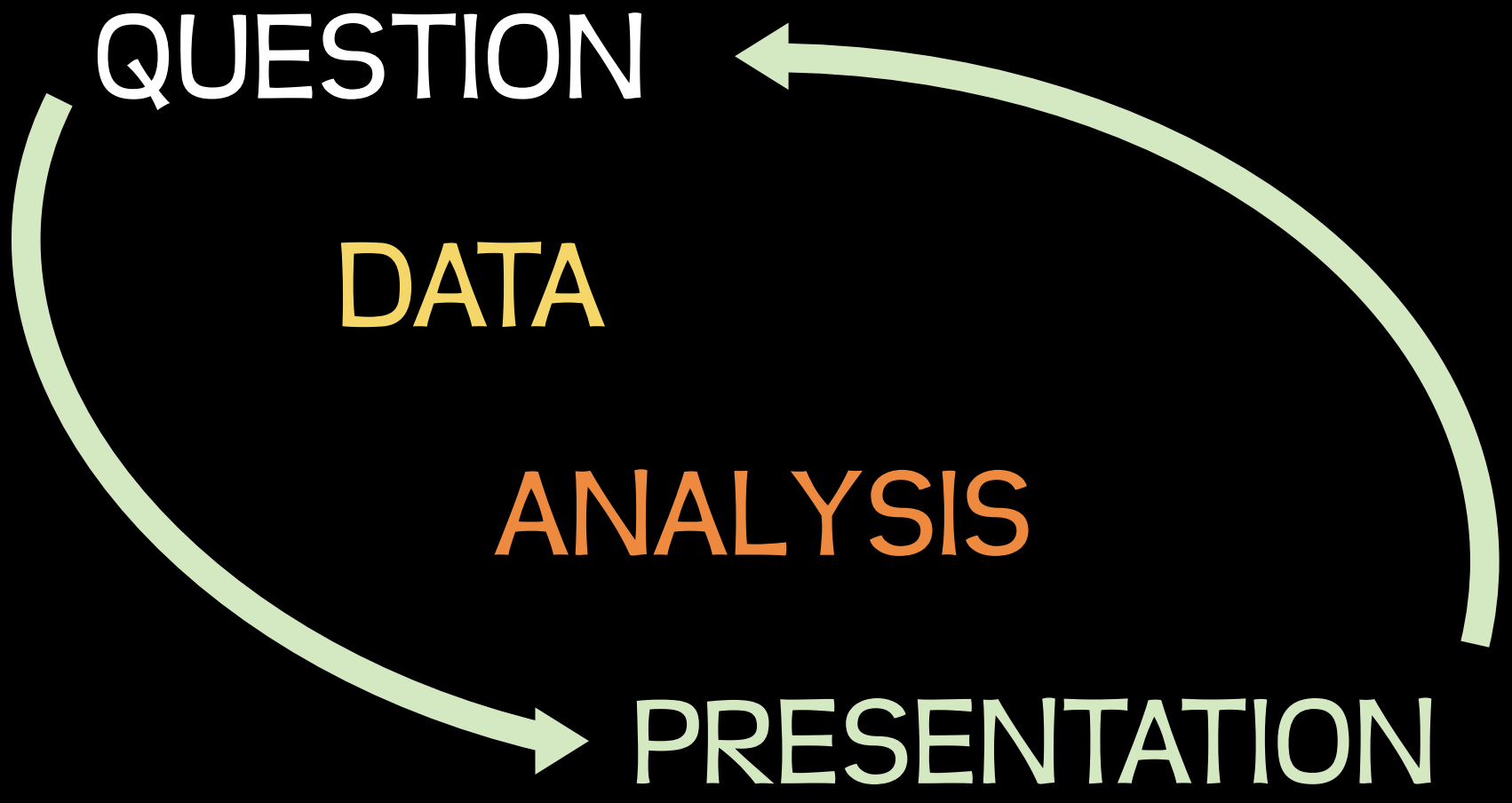

PREDICTION
INSIGHT
POWER
VALUES
PATTERN
ERRORS
CORRELATION
DATA
TESTING
EXPECTED
RULE
MEASUREMENT
OVB
ITERATIVE
MULTIPLE
MEAN
PARTIALLING
CAUSATION
CONVERSION
BASICS
OUTLIERS
ANALYSIS
RATE
VOTING
RSTUDIO
VS
FALSE
CONDITIONAL
QUESTION
PROBABILITY
CAUSALITY
SAMPLING
REGRESSION
BAYES
A/B
HYPOTHESIS
POSITIVES/NEGATIVES
P-VALUES
INTERPRETATION
PRESENTATION

b.socrative.com

Student login
into room BMEADAT

How to find answers to relevant questions using data


QUESTION
DATA
ANALYSIS
PRESENTATION

QUESTION

DATA

QUESTION

DATA

ANALYSIS

How does
a new piece of
information
affects
what we know
about the world?

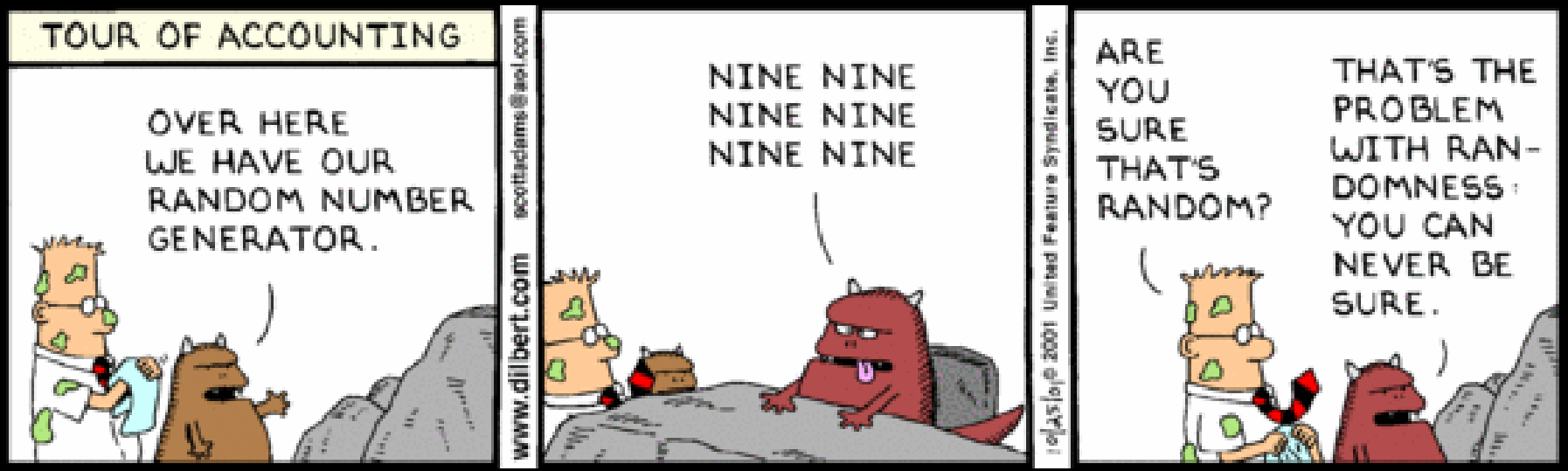
P(A|B)
conditional probability

probability that A occurs
given than B has occurred

RANDOMNESS

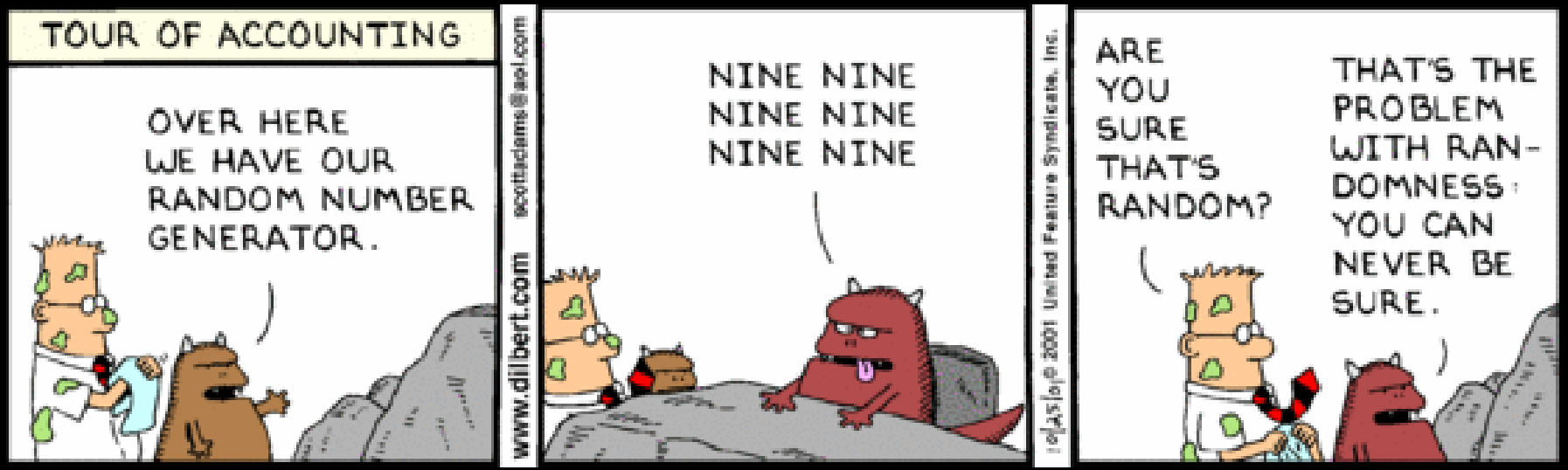
http://dilbert.com/strip/2001-10-25

RANDOMNESS



http://dilbert.com/strip/2001-10-25

RANDOMNESS
YOU CAN NEVER BE SURE

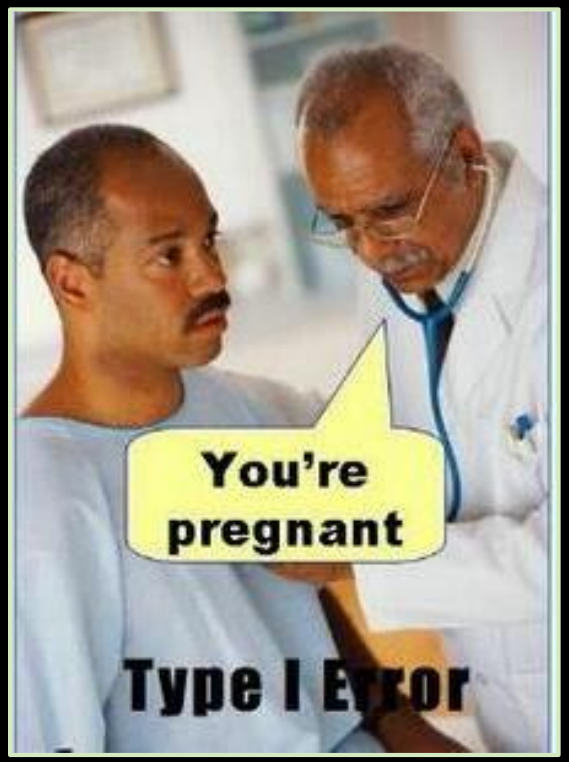


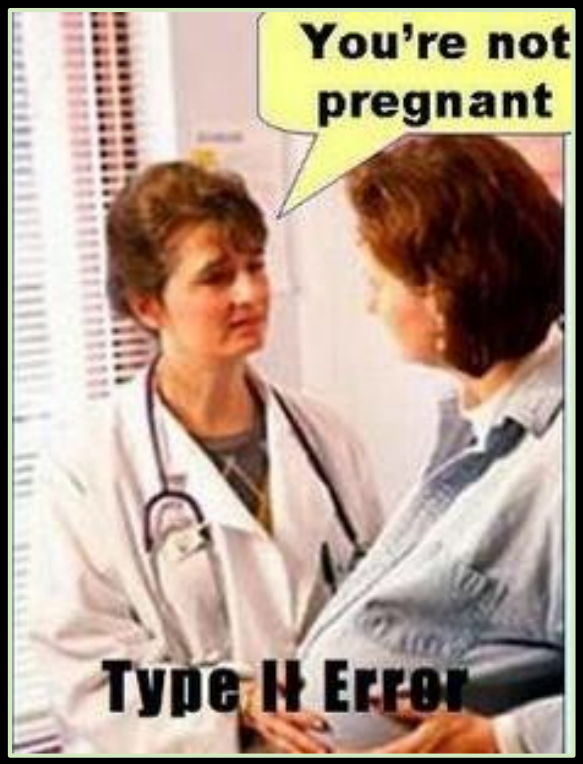
http://dilbert.com/strip/2001-10-25

Statistical Hypothesis Testing

Jake VanderPlas

Statistics for Hackers


You're pregnant
Type I Error


You're not pregnant
Type II Error

http://xkcd.com/882/


The
Economist


FiveThirtyEight

Statistical Hypothesis Inference Testing

Charles Lambdin

Statistical Hypothesis Inference Testing

Charles Lambdin

Mr. Allen, the candidate for political Party A will run against Mr. Baker of Party B for office. Past races between these parties for this office were always close, and it seems that this one will be no exception – Party A candidates always have gotten between 40% and 60% of the vote and have won about half of the elections.

Carl Morris (1987)

QUESTION

Mr. Allen needs to know whether he is going to win the election, so he orders a poll. Which of three outcomes would be the most encouraging for him?

(a) $Y = 15, n = 20$

(b) $Y = 115, n = 200$

(c) $Y = 1046, n = 2000$

Carl Morris (1987)