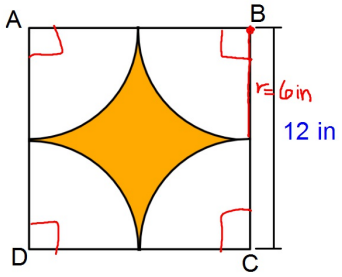
Find the probability that a point picked at random is in the shaded region of square ABCD. Give your answer as a percent to the nearest hundredth.



P(shaded)

$= \frac{SQ - \pi(6)^2}{SQUARE}$

$= \frac{144 - \pi(36)}{144}$

$= 21.46\%$

Some Statistics Vocabulary:

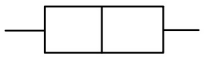
Measures of Central Tendency (the 3 M's):

- Mean
- Median
- Mode

Gives and indication of where the "middle" of the data is.

Box-and-Whisker Plot:

- Quartiles
- Extremes
- Median
- Upper 25%
- Lower 25%
- Middle 50%



- Outlier
- Percentiles

Measures of Variability:

- Range
- Interquartile range
- Standard Deviation
- Z-score

Gives an indication of how spread out the data is, or how much variation there is in the data.

- Sample
- Sample Proportion
- Margin of Error

- Normal Distributions
- Standard Normal Curve

Section 12-3: Analyzing Data

Measures of Central Tendency:

- Mean $\frac{\text{Sum of data}}{\text{\# of data items}}$ Symbol for Mean: $\bar{x}$ "x bar"
- Median The middle # or the mean of the middle two #'s (#'s must be in order!)
- Mode The # or #'s that occur the most often

What is the mode of this set of data?

~~41~~, 47, 46, 47, ~~39~~, ~~41~~, ~~39~~, 46

39, 39, 41, 41, 46, 46, 47, 47 NO MODE

they all appear the same # of times

What is the mode of this set of data?

13, 17, 21, 17, 13, 21, 13 MODE = 13

Given a set of data, how many Modes could there be?

- None
- One
- Many

Set 1: 16, 23, 30, 18, 19, 85, 23, 17, 9, 14

Outlier: An item that is substantially different from the other items in the set.

What statistic is usually affected the most by an outlier?

Usually the Mean

If there is an outlier what could this indicate?

- A mistake was made collecting the data
- A piece of equip needs to be checked
- Data is ok there is just one of the values that is quite different from the others

Find the Mean, Median, and Mode of this set of data.

2, 8, 13, 14, 15, 19, 21, 25, 27, 32

~~2~~,13, 27, ~~19~~, 21, ~~8~~, ~~14~~, 25, ~~15~~, 32

$\bar{x} = \frac{176}{10} = 17.6$ Median = $\frac{15+19}{2} = 17$

Mode = NONE

Using the graphing calculator to find median and mean:

2,13, 27, 19, 21, 8, 14, 25, 15, 32

1. Enter the data into a list (usually L_1) → STAT → 1:Edit...
2. Press STAT
3. Arrow to CALC
4. 1: 1-Var Stats
5. ENTER

this will give you:
Mean → $\bar{x}$
Median → MED

along with some other statistics
some of which we will use later
and some we won't

If you don't have a graphing calculator:

- find by hand
- use the internet (see my blog)
- use spreadsheet software