Activity:

- visibly random groups of 2 or 3

- there are X coloured counters in each bag
- X is known/given
- all bags are the same

- no looking in the bag
- only one counter may be taken out at a time
- you may take notes on the chalk board

How many counters of each colour?

Sep 4-6:32 PM

R	G	
16	4	20
11	9	20
15	5	20
33	17	50
19	6	25
23	7	30
117	48	165

$\frac{117}{165} \doteq 0.70$ $\frac{48}{165} \doteq 0.30$

Sep 5-12:57 PM

Experimental Probability:

Sept 5/2018

In a probability experiment, we count the number of outcomes we are looking for (A) compared to the total number of trials (T).

The experimental probability of outcome A is:

$$P(A) = \frac{n(A)}{n(T)}$$

$n(A)$ ← number of occurences of A

$n(T)$ ← total number of trials

As the number of trials increases, the quality of the experimental probability improves.

Aug 21-7:55 AM

Any experiment worth performing will have multiple possible outcomes. Adding all of these will always be 1, which can also mean 100%.

For an experiment with N outcomes:

$$P_1 + P_2 + P_3 + ... + P_N = 1$$

$N = 2$, red, green

$P_R = 0.70 \quad P_G = 0.30$

$P_{block} = P_R + P_G$

$= 1.00$

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Ex. A coin is flipped 5 times, landing on 'heads' one time.
Determine:
(a) p(H)
(b) p(T)
(c) the value, and meaning, of p(H) + p(T)

(a) $P(H) = \frac{n(H)}{n(all)}$ ← # of heads ← # of trials

probability of heads $= \frac{1}{5}$
$= 0.20$
$= 20\%$

(b) $P(T) = \frac{4}{5}$ → $n(T) = n(all) - n(H) = 5 - 1$

OR

(c) $\boxed{P(H) + P(T) = 1}$

$P(T) = 1 - P(H)$
$= 1 - 0.2$
$= 0.8$

"when you flip a coin, you must get a result (heads or tails)"

Sep 4-6:43 PM

<u>Subjective probability</u> is a statement made based on intuition, often with little or no mathematical data.

<u>Experimental probability</u> is a calculation based on the data obtained from a number of trials.

<u>Theoretical probability</u> is a purely mathematical analysis based upon all possible outcomes for the system.

As the number of trials increases, the experimental will get closer to the theoretical probability (i.e., it will get better and better).

Note: In general, when the term "probability" is used with no context, we will be referring to "theoretical probability." If you are unsure, ask!

Aug 22-12:26 PM

Assigned Work:

p.13 # 3, 4, 7, 6 or 8 or 9, 11, 12

7. $PoP_{April} = 70\%$

$$P(R) = \frac{n(R)}{n(all)}$$

# of rainy days

prob rain

days April = 30

$$0.70 = \frac{n(R)}{30}$$

$$n(R) = 21$$

Sep 4-6:25 PM

12. $P(m) = \frac{1}{4}$ $P(F) = 0.75$

$= 0.25$ $n(F) = 6$

$n(m)$

$$P(m) = \frac{n(m)}{n(T)} \qquad n(T) = n(F) + n(m)$$

$$P(m) = \frac{n(m)}{n(F) + n(m)}$$

let $x = n(m)$

$n(F) = 6$

$P(F) = \frac{3}{4}$

$$\frac{0.25}{1} = \frac{x}{6+x}$$

$x = 0.25(6+x)$

$1x = 1.5 + 0.25x$

$0.75x = 1.5$

$\frac{3x}{4} = \frac{3}{2}$

$6x = 12$

$x = 2$

$P(F) = \frac{n(F)}{n(T)}$

$\frac{3}{4} = \frac{6}{n(T)}$

$n(T) = 8$

Sep 6-2:03 PM