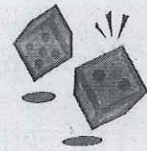
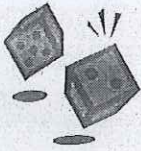


Probability – Worksheet #4



what should happen

A. Coin Flip

- 1) What is the theoretical probability that the coin will land on tails? $\frac{1}{2}$
- 2) What is the theoretical probability that the coin will land on heads? $\frac{1}{2}$
- 3) If the coin is flipped 140 times, how many times would you predict that the coin lands on heads? $\frac{70}{140}$

★ 4) Johnny flipped a coin 450 times. His results are below:

Heads	Tails
240	210

Experimental Prob. what actually happens.

What is the **experimental** probability that the coin lands on heads?

$$\frac{240}{450} = \frac{24}{45} = \frac{8}{15} = .53$$

B. Roll of the Die (6-sided)

5) $P(4) = \frac{1}{6}$

7) $P(\text{not a 2}) = \frac{5}{6}$

~~6) $P(1) = \frac{1}{6}$~~

8) $P(\text{odd}) = \frac{3}{6} = \frac{1}{2} = .5$

~~9) If the die is rolled 100 times, how many times would you predict a roll of 1 or 6?~~

10) Johnny rolled the die 1,500 times. His results are below:

# on die	1	2	3	4	5	6
Times rolled	230	245	300	280	215	230

What is the **experimental** probability that the die will land on a 4?

$$\frac{280}{1500} = \frac{28}{150}$$

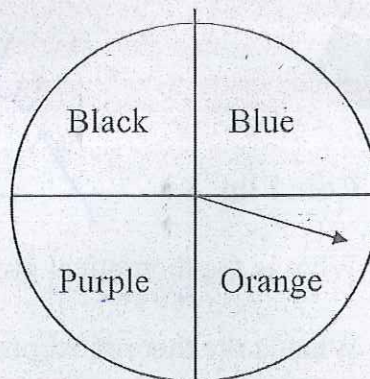
Probability – Worksheet #4

C. Spinners

11) $P(\text{black}) = \frac{1}{4}$

12) $P(\text{not orange}) = \frac{3}{4}$

~~13) $P(\text{blue or black}) = \frac{2}{4}$~~



14) If the spinner is spun 40 times, how many times would you predict a spin of something that is not purple?

$\frac{30}{40} = \frac{3}{4}$

15) Johnny spins the spinner 60 times. His results are below:

Color	Black	Blue	Orange	Purple
Times Spun	17	15	21	7

a) What is the experimental probability of a spin of orange?

$\frac{21}{60}$

★ b) Which color had an experimental probability that matched its theoretical probability?

$\frac{17}{60}$

$\frac{15}{60}$

$\frac{21}{60}$

$\frac{7}{60}$

Blue!

D. Multiple Choice.

16) Neil tossed a 6-sided die 90 times. The results of his tosses are recorded in the table below:

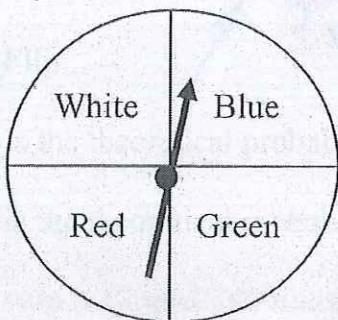
Number	Times tossed
1	13/90
2	15/90
3	14/90
4	12/90
5	18/90
6	18/90

What number had an experimental probability that matched its theoretical probability?

- A 2
- B 3
- C 4
- D 5

Probability – Worksheet #4

Bradley spun the spinner 40 times and recorded his results in the table.



Color	Frequency
Blue	12
Green	6
Red	9
White	13

A. For a single spin, what is the theoretical probability of spinning green?

$$\frac{1}{4}$$

~~B. For two consecutive spins, what is the theoretical probability of spinning a red first AND a blue second?~~

C. According to the table, what was the **experimental** probability of spinning blue?

$$\frac{12}{40} = \frac{3}{10} = .3$$

D. According to the table, what color had an **experimental** probability closest to its theoretical probability? ~~Red~~

$$\frac{6}{40} = .15 \quad \boxed{\frac{9}{40} = .225} \quad \frac{13}{40} = .325$$

E. If Bradley spins the spinner 200 times, how many times would you predict the spinner lands green? 50

F. EXPLAIN in your own words what the difference is between theoretical probability and experimental probability.

↓
what
actually
happens

↓
what
should
happen