Warm Up
Date:_____

Ch. 7 Lesson 8

Test Review

1) Tim surveyed his class and asked which class deserves free pizza? What is the problem with this question and how can he improve his results? *This biased b/c the class will pick their own class.*

Tim should survey many classes

2) Write a better question for the following

i) Which do you prefer more ~~kind~~ kittens or ~~vicious~~ reptiles?

not needed since → *words kind and vicious are it can lead you to pick one over the other*

3) Which graph would you use if you are <u>comparing</u> the test results of <u>different students?</u>

bar graph

4) A box contains 3 scarfs, 2 socks, 5 hats and 6 mittens. If Sam was to reach in and pull one item out at random, what is the probability of getting a sock?

Total items = 3 + 2 + 5 + 6 = 16

$$P\left(\text{get sock}\right) = \frac{\# \text{ sock}}{\text{Total}} = \frac{2}{16} = \frac{1}{8}$$

#4 is an example of what probability?

Theoretical → *b/c base on math*

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1) a) Possible outcomes are win, lose and spin again

1b) Possible outcomes are red, black, blue

1c) Possible outcomes are 1,2,3

2a) If he tossed it 20 times and heads showed 12 times then tails is 20 - heads

20 - 12

8

So tails showed 8 times

[handwritten: 12 → Heads, 8 → Tails } Experimental]

[handwritten: Expection Coin Theory]

[handwritten: $P(H) = \frac{\# \, H \, on \, Coin}{\# \, Side}$]

[handwritten: $= \frac{1}{2}$]

[handwritten: $= \frac{10}{20}$]

2b) Experimental probability

$p(\text{head}) = \dfrac{\# \text{ head tallied}}{\text{Total tries}} = \dfrac{12}{20} = \dfrac{3}{5}$

$p(\text{tails}) = \dfrac{\# \text{ tails tallied}}{\text{Total tries}} = \dfrac{8}{20} = \dfrac{2}{5}$

Sample Solutions

2. c) Yes, these results are what we would expect because 8 and 12 are both close to 10. $\frac{1}{2}$ of 20 is 10. Heads and tails should each show up about $\frac{1}{2}$ of the time.

d) I would expect the results to be closer to the theoretical probabilities because the number of trials is much greater. I would expect Dave to get about 50 heads and 50 tails because heads and tails are equally likely outcomes. I would not expect the results to be exactly 50 heads and 50 tails.

[handwritten: ↑ experimental]

3a) Avil spun the pointer 24 times (i counted the tally marks)

b) $p(\text{blue}) = \dfrac{\# \text{ blue tallied}}{\text{Total tries}} = \dfrac{17}{24}$

$p(\text{orange}) = \dfrac{\# \text{ orange tallied}}{\text{Total tries}} = \dfrac{7}{24}$

c) Theoretical

$p(\text{blue}) = \dfrac{\# \text{ blue}}{\text{Total}} = \dfrac{3}{4} \overset{\times 6}{=} \dfrac{18}{24}$

$p(\text{orange}) = \dfrac{\# \text{ orange}}{\text{Total}} = \dfrac{1}{4} \overset{\times 6}{=} \dfrac{6}{24}$
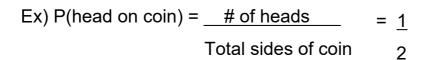
These are close to the above probabilities, so results are as expected.

RECALL   Two types of Probability

Theoretical Probability - is what is expected to happen based on theory of math. Use a formula.

P(event) = # of favorable outcomes

Total # of possible outcomes

Ex) P(head on coin) = ____ # of heads ____   = 1

Total sides of coin   2

TODAY

Experimental Probability - is found by repeating an experiment and observing the outcomes.

$$P(event) = \frac{number\ of\ times\ event\ occurs}{total\ number\ of\ trials}$$

Example:
A coin is tossed 10 times:
A head is recorded 7 times
and a tail 3 times.

$$P(head) = \frac{7}{10}$$

$$P(tail) = \frac{3}{10}$$

Test out line
→ Example Questions