TODAY'S AGENDA: March 20-21

- **Work on Khan Academy Mission:**
  > **Probability**

- Today's Objective: Large-Group Lesson:

  > **Probability Models**

- Today's Standard:

  > Summarize, represent and interpret data on a single count or measurement variable.

Probability Models

Practice predicting the number of times a certain event will happen.

Probability Model Facts:

- The sum of the *probabilities* of all possible outcomes *must* equal 1.

- The probability of an outcome must be between 0 and 1, inclusive.

- The probability of an outcome can not be negative.

Garcia is preparing for his football game. The following table shows a probability model for the number of rushing yards that he will have next game.

Number of rush yards	Probability
0 – 39	$\frac{1}{8}$
40 – 79	$\frac{1}{4}$
80 – 119	$\frac{1}{2}$
120 +	$\frac{1}{8}$

Is this a valid probability model?

○ Yes

○ No

Eitan randomly selected volcanoes to travel to and study. After traveling, he had seen 13 cinder cone volcanoes, 18 shield volcanoes, and 6 stratovolcanoes.

Use the observed frequencies to create a probability model for Eitan randomly selecting one volcano in the world on which to conduct an extensive study.

Input your answers as fractions or as decimals rounded to the nearest hundredth.

Type of volcano	Estimated probability
Cinder cone	13 / 37
Shield	18 / 37
Stratovolcano	6 / 37

$$\frac{13}{18}\frac{}{}\frac{6}{37}$$

Tanner is watching a basketball game. The following table shows a probability model for the outcome of the game.

Outcome	Probability
Bulls win	0.24
Tie	−0.1
Tigers win	0.86

Is this a valid probability model?

○ Yes

○ No

Michael, Ronald, Lidia, Alexandra, and Catherine are sharing a basket of fries. The following table shows an incomplete probability model for who will eat the next fry.

Person	Probability
Michael	0.3
Ronald	?
Lidia	0.1
Alexandra	0.32
Catherine	0.1

If there are 200 fries in the basket, which of the following is the *best* prediction for the number of fries that Ronald will eat?
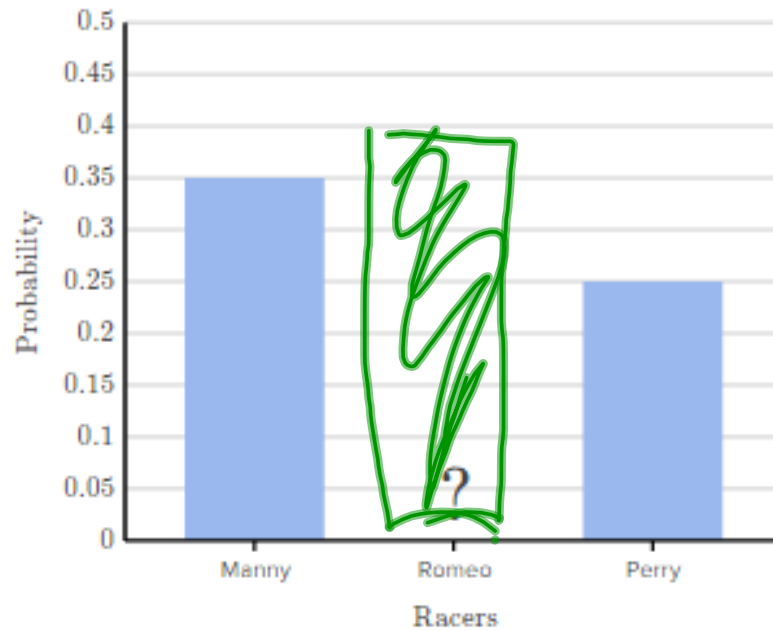
- ○ 10

- ○ 36

- ○ 60

- ○ 64

Manny, Romeo, and Perry race each other in carts. There are no other racers, and exactly one racer wins each race (no ties allowed!). The following graph shows an incomplete probability model for who will win any given race.

$$.4 \times 50 = 20$$

If they were to race 50 times, which of the following is the *best* prediction for the number of races that Romeo would win?

- ○ 10
- ○ 15
- ● 20
- ○ 25