

Solutions

Nov 20-18:35

1. Why is a simulation helpful in a problem like Yo Sep's?
2. Yo Sep used a spinner to simulate collecting all three music CDs. What other methods might he have used?
3. Yo Sep found that he would have to "buy" eight boxes of cereal to get all three CDs. Is it fair to say that every person who purchases eight boxes of cereal will collect all three CDs? Justify your reasoning.

1. Helps to estimate how many boxes he needs to buy to win.

2. Number cube

3. No. Each simulation is likely to give a different result. We can find the mean of these to get an approximate "answer"

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4. The tally chart shows the results of a spinner simulation.

Letter	Tally
M	
U	
S	
I	
C	###

2
3
1
3
5

- a) How many spins were needed to get all five letters?
b) Which letter was last? How do you know?

a) 14 spins
b) S - it only appears once.

5. The tally chart shows the results of a number cube simulation.

Number	Tally
1	
2	
3	
4	
5	###
6	

3
4
2
5
1

- a) How many rolls were needed to get all six numbers?
b) Which numbers could have been last? Explain your reasoning.

a) 16 rolls
b) 4 or 6 - both appear only once.

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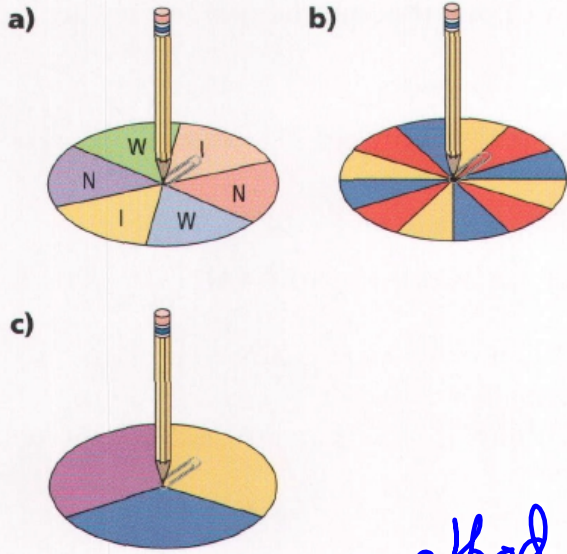
6. Describe an item that could be used to simulate each situation. Explain why each item is appropriate.

- a) Choose one of two DVD movies.
b) Choose a sundae topping at random from eight choices.
c) Win a free music CD by collecting letters from pop bottle caps to spell C-A-P.

a) Flip a coin
b) 8 sided spinner
c) Choosing from 3 cards at random.

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7. Inside the wrapper of a chocolate bar is a letter. You win if you collect W, I, and N. Explain how each spinner could be used to simulate this contest.



a) Spin the spinner. Record the results.

b) Assign each colour letter. Spin the spinner and record the results.

c) Same method as for (b)

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8. Describe a situation that can be simulated using each method.

- a) flipping a coin
- b) rolling an odd number on a number cube
- c) ~~picking a certain coloured marble from a bag of 5 green, 2 red, and 3 yellow marbles~~
- d) ~~picking a certain card from a deck of 52 cards~~

a) Choosing T/F on a test.

b) Cake or ice cream for dinner.


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9. In the Example, Yo Sep used a six-section spinner to simulate buying cereal boxes to get three CDs. Suppose another CD is added. For every four copies of CD 1, there is one each of CD 2, CD 3, and CD 4.

- How many boxes might he have to "buy" to get all four CDs?
- Design and conduct a simulation for the situation.
- Compare your prediction with the simulation. Explain your results.

a) Need a 7-sided spinner.
Have to buy AT LEAST 4 boxes.

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 10. During the holiday season, the number of customers in stores increases. On average, 100 people enter the store every hour. 50% are women, 30% are men, and the rest are children.

- Predict who the next 20 customers will be.
- Design and conduct a simulation for the situation.
- Compare your prediction with the simulation. Explain your results.

a) Multiply each percentage by 20
 \Rightarrow Women = $50\% \times 20 = 10$
 Men = $30\% \times 20 = 6$
 Children = $20\% \times 20 = 4$

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