

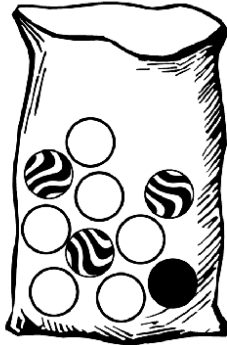
Name:

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LG 7.1

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_  
7.1: Calculate probabilities involving "OR" & "AND" and "NOT" using probability rules and models.

1. Use the image below to answer the following questions:



a) Sancheezy picks up a marble, then PUTS IT BACK IN and selects another one. Explain why these two events are independent.

The first outcome does not affect the second outcome.

b) Sancheezy picks one marble, then places it back and picks up another. What is the probability that he picks up the black marble the first time AND the second time?

$$\frac{1}{10} \cdot \frac{1}{10} = \frac{1}{100}$$

c) What is the probability that he picks up a white marble, then a swirly marble?

$$\frac{6}{10} \cdot \frac{3}{10} = \frac{18}{100}$$

> All AND Problems

d) What is the probability that he does NOT pick up a swirly marble then picks up a black marble?

$$\frac{7}{10} \cdot \frac{1}{10} = \frac{7}{100}$$

2. Ms. Soto does a poll of families at MESA. She finds that 35% get a call home every week, 50% got a text home every week, and 20% got a call home AND text home every week.

a. Are the events "calling home" and "texting home" mutually exclusive? Explain:

No, they can both happen -> a parent can get a call AND a text.

b. Ms. Soto claims that the probability that a parent gets a text OR call home is 105% because .35+.50+.20=1.05. Explain why she is incorrect! Then, find the real probability that a student gets a call home OR text home every week.

She needed to subtract the overlap ('AND') Part

$$.35 + .50 - .20 = .65$$

c. What is the probability that a person does not get a text or call home every week? Show your work:

$$1 - .65 = .35$$