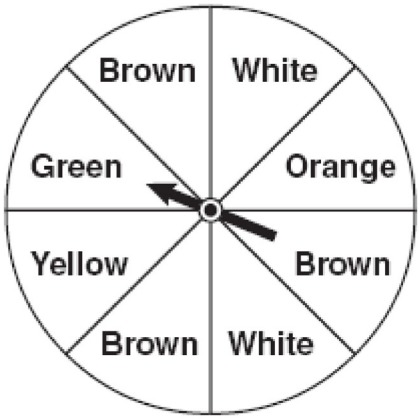
A.S.23: Geometric Probability: Calculate the probability of a series of independent events; a series of dependent events; two mutually exclusive events, two events that are not

1 Keisha is playing a game using a wheel divided into eight equal sectors, as shown in the diagram below. Each time the spinner lands on orange, she will win a prize.



If Keisha spins this wheel twice, what is the probability she will win a prize on *both* spins?

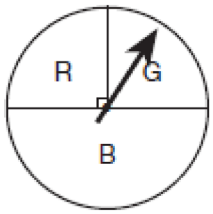
1) $\frac{1}{64}$

2) $\frac{1}{56}$

3) $\frac{1}{16}$

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

2 At a school fair, the spinner represented in the accompanying diagram is spun twice.



What is the probability that it will land in section *G* the first time and then in section *B* the second time?

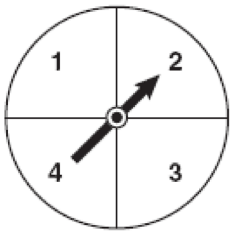
1) $\frac{1}{2}$

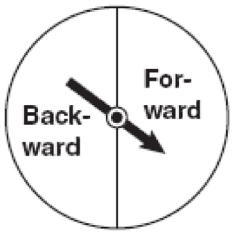
2) $\frac{1}{4}$

3) $\frac{1}{8}$

4) $\frac{1}{16}$

3 Brianna is using the two spinners shown below to play her new board game. She spins the arrow on each spinner once. Brianna uses the first spinner to determine how many spaces to move. She uses the second spinner to determine whether her move from the first spinner will be forward or backward.





Find the probability that Brianna will move *fewer than* four spaces and *backward*.

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Answer Section

1 ANS: 1
$\frac{1}{8} \times \frac{1}{8} = \frac{1}{64}$

REF: 010928ia

2 ANS: 3
$\frac{1}{4} \cdot \frac{1}{2} = \frac{1}{8}$

REF: 010106a

3 ANS:
$\frac{3}{8}$. $P(s_1 < 4) \times P(s_2 = \text{back}) = \frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$

REF: 080832ia