Probability and Combinatorics

Question

Suppose a bag contains three red tiles and one blue tile. Suppose you pull out two tiles. Which of the following is more likely?

(a) The two tiles are the same color.
(b) Each of the two tiles is a different color.
(c) Neither

Answer: c. Neither. It is suggested that students investigate the sample space to justify. This is a nice problem to introduce a unit on combinatorics, as it is somewhat counterintuitive.