4-69. See below.
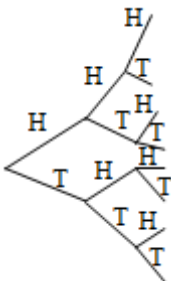
   a. A tree diagram; a third dimension would be needed to represent the three coins with an area model.

   b. See tree diagram below; 8.

   c. *i.* $\frac{1}{8}$ *ii.* $\frac{3}{8}$ *iii.* $\frac{7}{8}$ *iv.* $\frac{3}{8}$

   d. They are both the same probability of 50%.

   e. The sample space remains the same; *i.* $\frac{64}{125}$ *ii.* $\frac{4}{125} + \frac{4}{125} + \frac{4}{125} = \frac{12}{125}$ *iii.* $\frac{61}{125}$ *iv.* $\frac{12}{125}$

4-70. Yes, they are similar due to AA ~ because $m\angle B = m\angle E$ and $m\angle C = m\angle C$ (triangles share an angle).

4-71. $\frac{1}{6}$, If the die is "fair," each roll of the die is an independent event.

4-72. See below.

   a. It implies that because Brian is always late on Tuesday, then today must be Tuesday.

   b. The "Brian is always late on Tuesdays" and "Today is Tuesday" ovals should be next to each other, both with arrows pointing to "Brian will be late today."

4-73. See below.

   a. 3, 15, 75, 375

   b. 10, −50, 250, −1250

4-74. $x \approx 10.39$, $y = 12$