

Name: _____

Date: _____

Solve. Show your work.

3. Three colored pens are placed in a backpack, 1 pen with black ink and 2 pens with green ink. First, Peter randomly selects a pen from the backpack. Then he rolls a fair six-sided number die labeled from 1 to 6. The result recorded is the number facing up. Draw a possibility diagram to represent all the possible outcomes. Then find the probability of selecting a green pen and getting an even number.

4. Tina rolled a red fair four-sided number die and a yellow fair four-sided number die, each with faces labeled 1 to 4. The results recorded are the numbers facing down. Draw a possibility diagram to represent all the possible outcomes. Then find the probability that the sum of the numbers is at least 6.

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5. A shop sells 3 brands of apple juice, 2 brands of grape juice, and 1 brand of orange juice. The juices are sold in small, medium, and large bottles. A customer randomly selects a bottle of fruit juice. Draw a possibility diagram to represent all the possible outcomes. Then find the probability that the customer selects a small bottle of apple juice.
6. Anna draws a bead from three numbered beads: 1, 3, and 5. Then she randomly selects a card from four number cards: 1, 2, 4, and 6. The product of the numbers drawn is recorded.
- a) Draw a possibility diagram to represent all the possible outcomes.
- b) Find the probability of getting a product that is greater than or equal to 5, and less than or equal to 10.

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7. Bucket A contains a blue hermit crab, a green hermit crab, and a red hermit crab. Bucket B contains a green pebble, a red pebble, and a yellow pebble. Paulette randomly selects a hermit crab from Bucket A and a pebble from Bucket B. Draw a possibility diagram to represent all the possible outcomes. Then find the probability that the crab and the pebble are the same color.

8. Jimmy randomly draws a disc from a bag containing 2 blue discs and 1 red disc. He then rolls a fair four-sided number die labeled 1, 1, 3, and 4, and records the result. The result recorded is the number facing down. Draw a possibility diagram to represent all the possible outcomes. Then find the probability of drawing a blue disc and getting a 1.

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9. One red tissue and one black tissue are placed in a basket. Rudy randomly selects a tissue and notes its color. After replacing the tissue, Rudy randomly selects another tissue and notes its color. This process is repeated a third time. Draw a tree diagram to represent all the possible outcomes. Then find the probability that Rudy selected the red tissue more times than the black tissue.

10. Jessica writes a letter to each of her three friends. She writes each address on three different envelopes. She then randomly inserts the letters into the three different envelopes. Draw a possibility diagram to represent all the possible outcomes. Then find the probability that all of the letters correspond to the correct envelope.