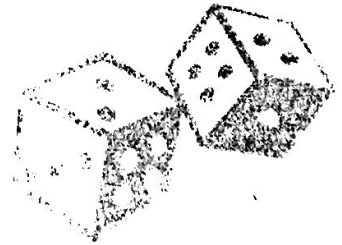
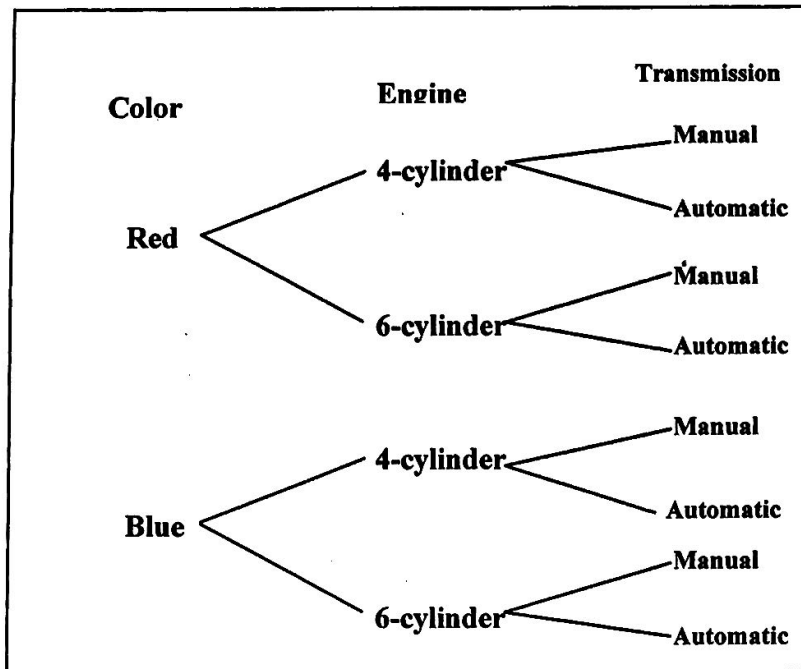


## Probability and Compound Events Worksheet

An automobile dealer has cars available with the combinations of colors, engines, and transmissions indicated in the following tree diagram. A selection is made at random.



1. What is the probability of selecting a car with manual transmission?
2. What is the probability of selecting a blue car with manual transmission?
3. What is the probability of selecting a car with a 4-cylinder engine and a manual transmission?
4. What is the probability of selecting a blue car with a 6-cylinder engine and an automatic transmission?

\* Draw a tree diagram for questions 5 and 6. Use the results to answer each question.

*put on separate sheet of paper!*

5. Find the probability of getting exactly three tails when four coins are tossed.
6. Find the probability that a family with four children has exactly four girls. Assume that the probability a girl is born is the same as the probability a boy is born.

7. In Exercise 6, what is the probability that the family has two boys and two girls in any order?
8. Compare and contrast the tree diagrams for Exercise 5 and 6.

For each shrimp, lobster, or chicken dinner in a restaurant, you have a choice of soup or salad. With shrimp you may have hash browns or a baked potato. With lobster you may have rice or hash browns. With chicken you may have rice, hash browns, or a baked potato. If all combinations are equally likely to be ordered, find each probability of an order containing each of the following. Draw a tree diagram to answer each question.

9. Shrimp
10. Rice
11. Shrimp and rice
12. Soup and hash browns
13. Chicken, salad, and rice -



Bill, Raul, and Joe are in a bicycle race. If each boy has an equal chance of winning, find each probability. Draw a tree diagram to answer each question.

14. Joe wins the race.
15. Raul finishes last.
16. Joe, Raul, and Bill finish first, second, and third, respectively.

Adam's class set up a lottery with two-digit numbers. The first digit is a number from 1 to 4. The second digit is a number from 3 to 8. Draw a tree diagram to answer each question.

17. What is the probability that 44 was the winning number?
18. What is the probability that a number with a 2 in it wins?