Name _____ Date _____ Class_____
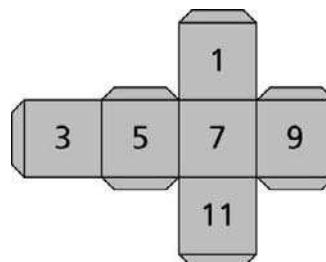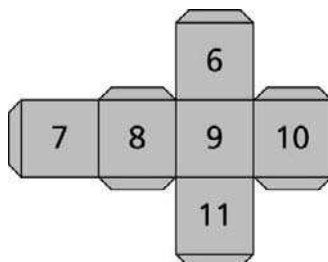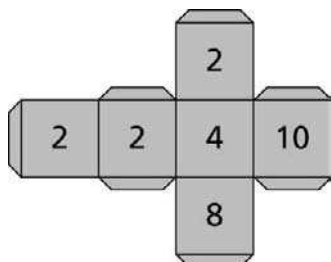
Practice B

Analyzing Decisions

Find the expected value for each of the number cubes with given sides.

1. _____   2. _____   3. _____

```
    +---+                   +---+                   +---+
    | 2 |                   | 6 |                   | 1 |
+---+---+---+---+       +---+---+---+---+       +---+---+---+---+
| 2 | 2 | 4 | 10|       | 7 | 8 | 9 | 10|       | 3 | 5 | 7 | 9 |
+---+---+---+---+       +---+---+---+---+       +---+---+---+---+
    | 8 |                   | 11|                   | 11|
    +---+                   +---+                   +---+
```

4. Find the expected value for the sum of rolling the number cubes in Questions 2 and 3.

   _____

5. Jayson can take two routes to get to school. Route A takes 10 minutes without traffic, but 15 minutes with traffic. Route B takes 8 minutes without traffic, and 20 minutes with traffic. He estimates a 20% chance of encountering traffic on Route A and a 40% chance of encountering traffic on Route B. Which route would you recommend Jayson take? Explain.

   _____

   _____

6. In a game of chance, a contestant must choose a number from one of three categories. Correct number choices in Category A are worth $1500, but there is a penalty of $1000 for each incorrect choice. Correct number choices in Category B are worth $1000, with a $500 penalty for each incorrect choice. Correct number choices in Category C are worth $500, with no penalty for an incorrect choice. The probability of choosing correctly is 0.05 for Category A, 0.15 for Category B, and 0.25 for Category C. Which category has the highest expected value?

   _____

   _____