Problem of the Week
Problem B and Solution
Deese Dice are D12s

Problem
Dice A, B, C, and D shown below are also known as D12s. A D12 is a 12-sided die with a
distinct number from the set \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\} on each side.

One of the four dice above can be made from the net shown below. Which of A, B, C, or D corresponds to the given net?

Solution
One way to solve the problem would be to use the net to construct the 12-sided die. A construction of the 12-sided die from the given net would reveal that it corresponds to die C. A photo of the die somewhat roughly constructed from the original net is shown above.

Alternatively, we can reject each of the other three die as follows:

- The 1 is adjacent to 3, 2, 6, 5, and 4 in the net. The 8 is adjacent to the 1 on the first die. So we can rule out die A.
- The 1 is adjacent to 3, 2, 6, 5, and 4 in the net. The 10 is adjacent to the 1 on the second die. So we can rule out die B.
- The 6 is adjacent to 1, 2, 8, 9, and 5 in the net. The 11 is adjacent to the 6 on the fourth die. So we can rule out die D.

Since one die corresponds to the net and we have ruled out the first, second and fourth die, we can conclude that the third die, die C, can be made from the given net.