Homework 8
due Wednesday March 5 in class

1. Biggs 20.1 # 3 page 443
2. Biggs 20.1 # 4 page 443
3. Biggs 20.2 # 1 page 447
4. Biggs 20.2 # 4 page 448

5. In the RSA encryption system choose $n = 65$. Find the decryption key $d$ for $e = 5$ and for $e = 7$. For $n = 33$ and $e = 3$ encrypt the message $M = 18$.

6. (a) Suppose you are handed the cheap rubik box in the following configuration:

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front face back face

Can you bring it back to the initial configuration by a finite sequence of simple moves?

(b) Now suppose that rotating the two central rectangles by $180^0$ are also allowed moves. Can you reach the initial configuration in this case?

[Hint: Use Maple for this problem!!]