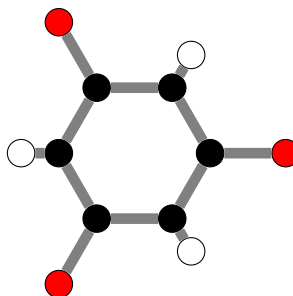




4. Suppose that the following figure represents a molecule (I'm not sure if such a molecule exists).



- (a) (3 points) Find *all* of the actions (not just the generators) that make up the group of symmetry for this molecule. You should describe actual actions (verbs!), not just the ending configurations after an action has been applied.
- (b) (3 points) Find a minimal generating set. (By minimal, I mean that you couldn't get rid of any one of the actions that you decided was a generator and still generate the entire group of symmetries; there is more than one correct answer.)
- (c) (5 points) Using your answers to part (a) and (b), draw a possible Cayley diagram for this molecule's group of symmetries.