1. **Draw a graph that has five vertices and 3 edges**

2. **Draw a graph that has five vertices and 5 edges**

3. **Write in set theoretic notation the set of all positive integers whose square is greater than 5.**

4. **Write in set theoretic notation the set of all functions from the integers to the integers that have at least one fixed point**

5. **Write in set theoretic notation the set of all functions from the integers to the integers that have exactly one fixed point**

6. **Write in set theoretic notation the set of all sets of integers that have no even numbers**

7. **Write in set theoretic notation the set of all sets of real numbers so that the product of all its elements is greater than 100**

8. **Express using mathematical notation the property that a function F from a set A to a set B is one-to-one (injective)**

9. **Express using mathematical notation the property that a function F from a set A to a set B is surjective**

10. **Find a closed form solution for the following recursively defined function F (defined for all positive integers n), and prove it correct by induction on n:**

**F(1) = 4, F(2) = 13, and F(n) = F(n-1) + 6n -3.**

11. **In the Rock Game, who has a winning strategy for the case where there are 10 rocks on one pile and 8 rocks on the other pile? How did you figure this out?**