Quiz #4

Name: .... SSN: .... Row:

Instructions: Do *ONLY* **four** of the following questions. **Circle** the questions which you want to be graded and **cross out** those which you do **not** want to be graded.

NOTE: *If you do not follow the instructions above, you may lose some points.*

Question 1: (5 points) What is the degree sequence of $\overline{C_n}$?

Solution: $n - 3$, $n - 3$, ..., $n - 3$ (n of them).

Question 2: (5 points) When does $\overline{C_n}$ have an Euler cycle?

Solution: When n is odd and $n \geq 5$.

Question 3: (5 points) Let G be a simple graph with a degree sequence k_1, k_2, k_3, k_4, k_5, k_6, k_7. What is the degree sequence of $\overline{G}$?

Solution: $6 - k_7$, $6 - k_6$, $6 - k_5$, $6 - k_4$, $6 - k_3$, $6 - k_2$, $6 - k_1$.

Question 4: (5 points) Let G be a simple graph with a degree sequence k_1, k_2, k_3, k_4, k_5, k_6, k_7. How many edges does $\overline{G}$ have?

Solution: $21 - \frac{\sum_{i=1}^{7} k_i}{2}$.

Question 5: (5 points) Let G be a simple graph with n vertices and k edges, how many edges does $\overline{G}$ have?

Solution: $\frac{n(n-1)}{2} - k$.

Question 6 (5 points) What is the degree sequence of K_n?

Solution: $n - 1$, $n - 1$, ..., $n - 1$ (n of them).

Question 7 (5 points) When does K_n have an Euler cycle?

Solution: When n is odd.

Question 8 (5 points) How many edges does the $n-$cube have?

Solution: $n \cdot 2^{n-1}$.