

Hour-Exam on Friday, June 21

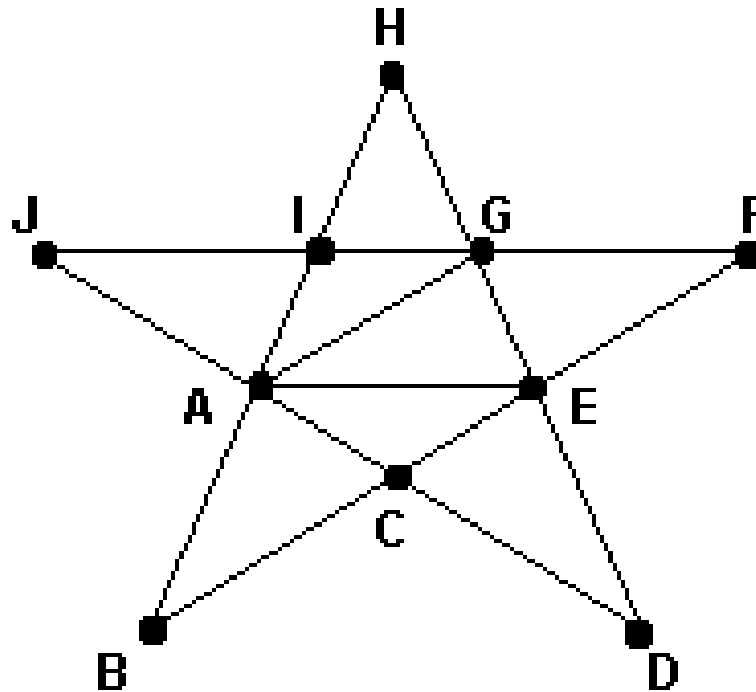
- Covers material in Chapters 1, 2, 3
- Bring #2 pencil and picture ID.
- You may use a calculator.
- You may NOT use cell phones or other wireless devices.
- You may NOT use books or notes.
- There will be room on the exam paper for calculations.

Extra open lab session this week:

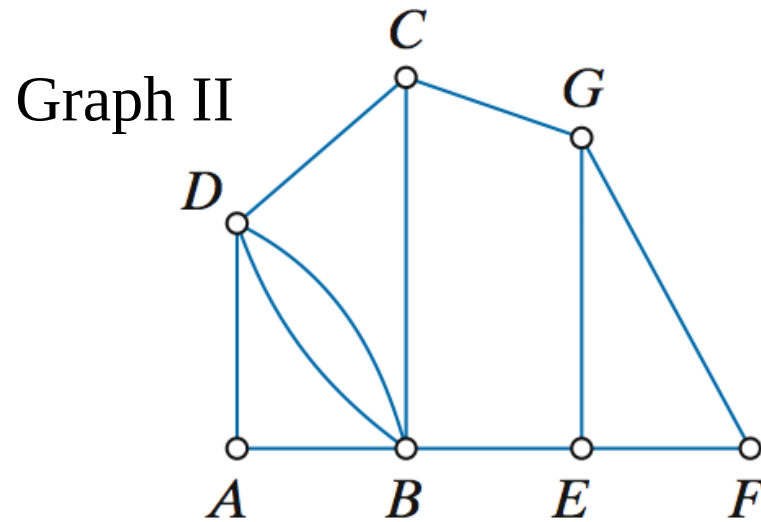
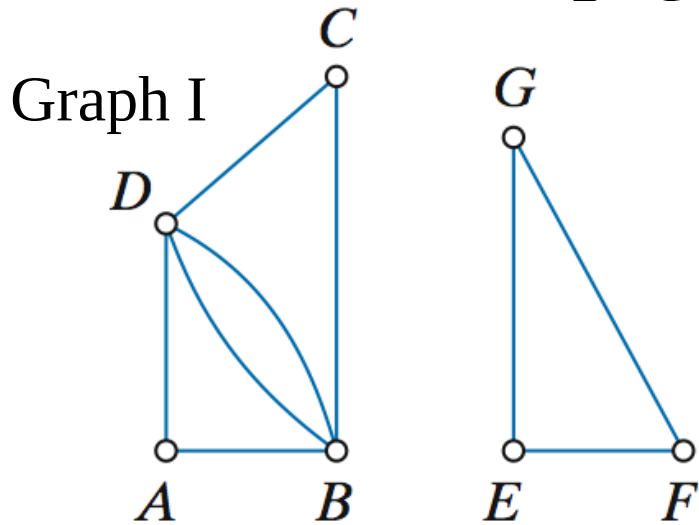
Thursday 2:30 – 5:00 in Faner 1032

1. What is the degree of vertex A in the graph below?

- A) 3
- B) 4
- C) 5
- D) 6**



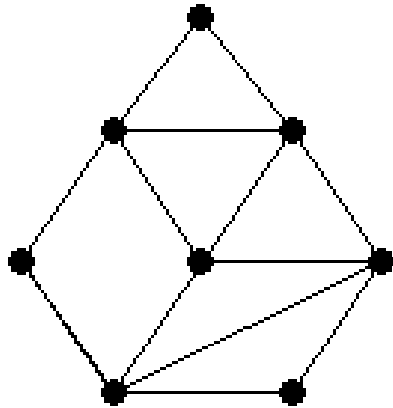
2. Which of the graphs below are connected?



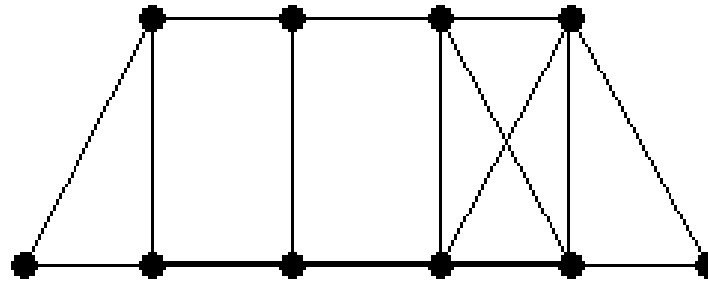
- A) Graph I only
- ☒ B) Graph II only
- C) Both Graph I and Graph II
- D) Neither Graph I nor Graph II

3. Which of the graphs below have Euler circuits?

I

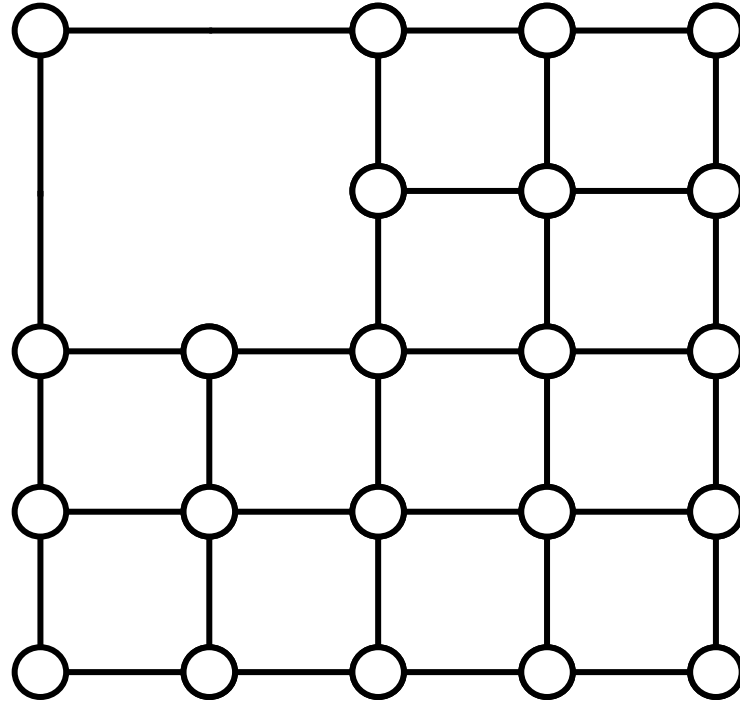


II



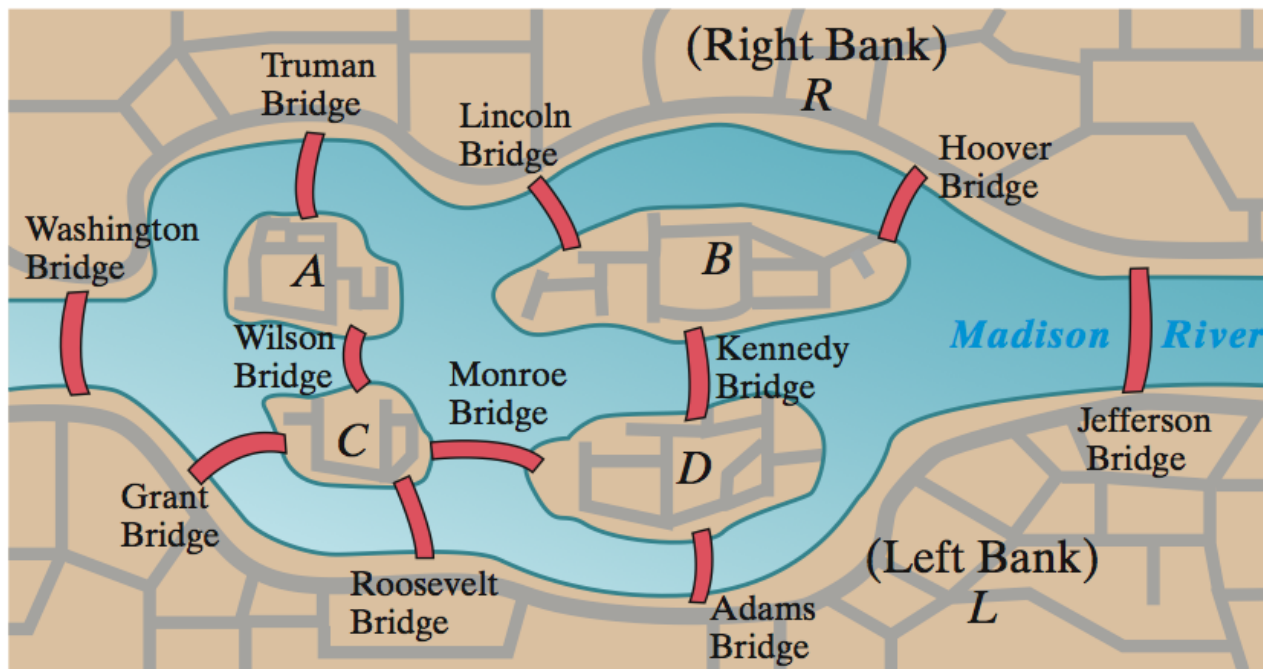
- A) I only
- B) II only
- C) Both I and II
- D) Neither I nor II

4. An optimal Eulerization of this graph can be obtained by duplicating



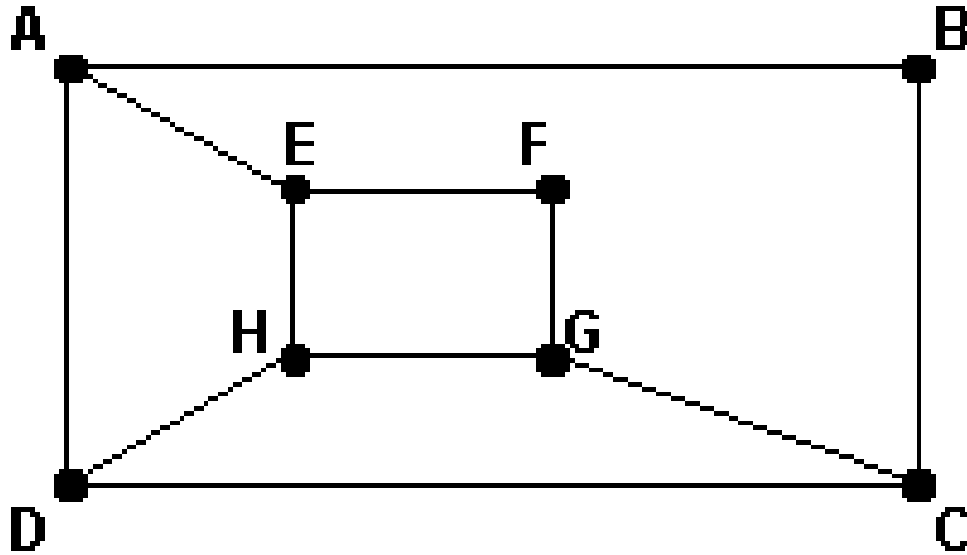
- A) 6 edges. B) 7 edges. **C) 8 edges.** D) 9 edges.

5. A river runs through the middle of this city. There are four islands and eleven bridges as shown in the figure below. A graph that appropriately models this situation would have:



- A) 11 vertices & 6 edges
- B) 4 vertices & 11 edges
- ☒ C) 6 vertices & 11 edges
- D) 6 vertices & 17 edges

6. A Hamilton circuit on the graph below is given by:



- A) A,D,C,B,F,G,H,E,A
- B) A,B,C,D,H,G,F,E
- C) A,B,C,D,H,G,F,E,A**
- D) A,B,C,D,H,G,F,E,H,D,A

7. The number of Hamilton circuits in K_6 is

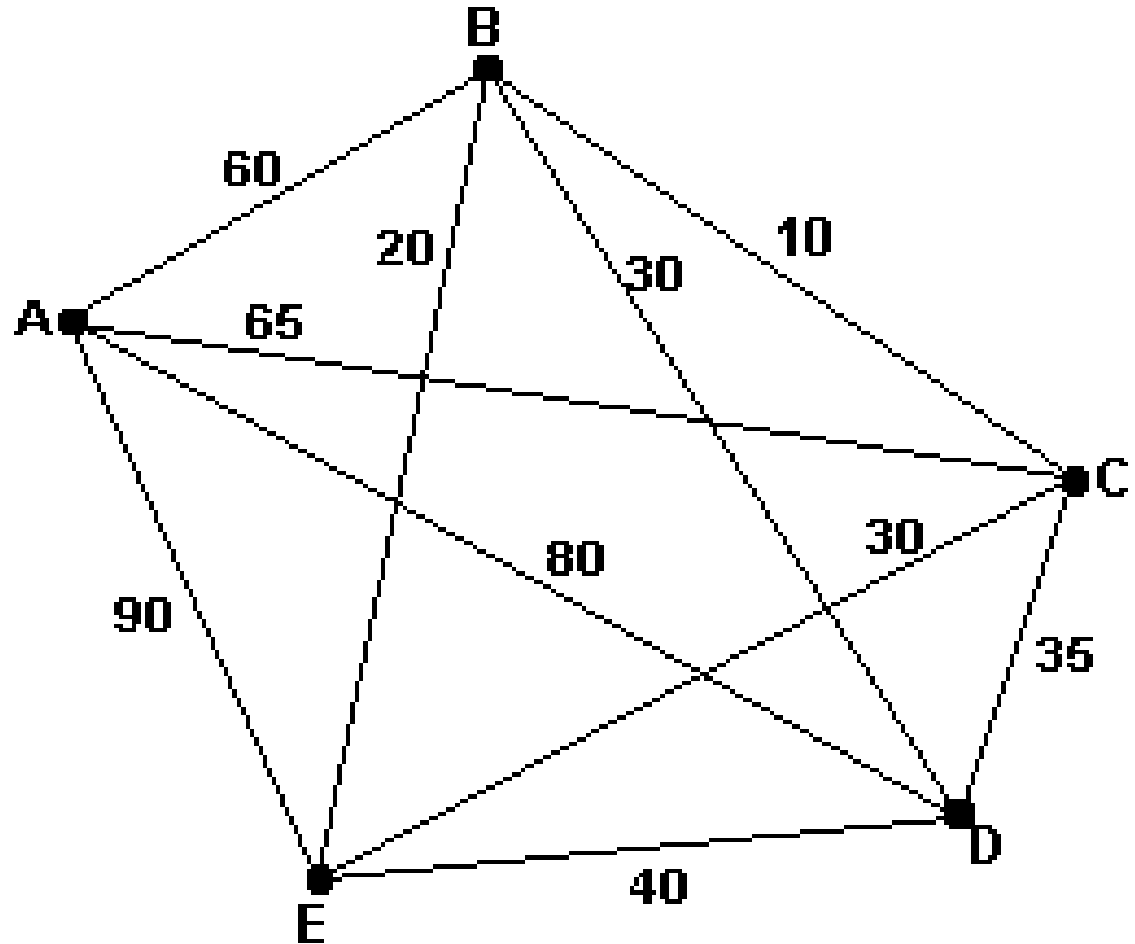
A) 15

B) 42

☒ C) 120

D) 840

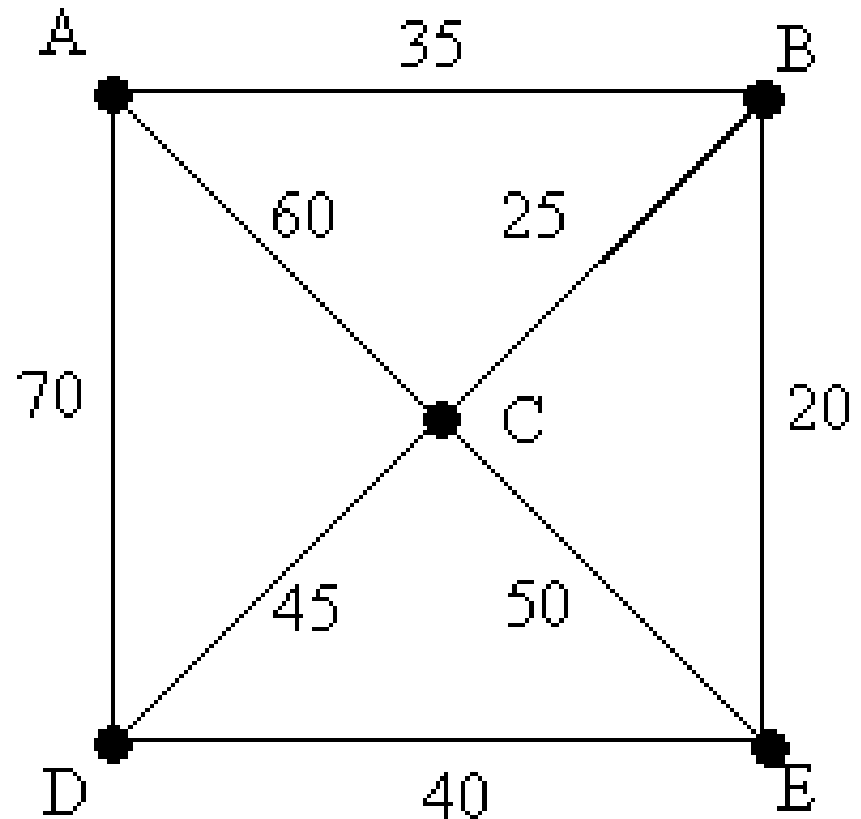
8. The cost of the nearest-neighbor tour starting at A is



- A) 215
- B) 220**
- C) 235
- D) 295

9. The cheapest-link tour is given by

- A) A,C,B,E,D,A
- B) A,B,C,E,D,A
- C) A,B,E,D,C,A
- D) A,D,C,E,B,A



10. The number of edges in a tree with 24 vertices is:

A) 25

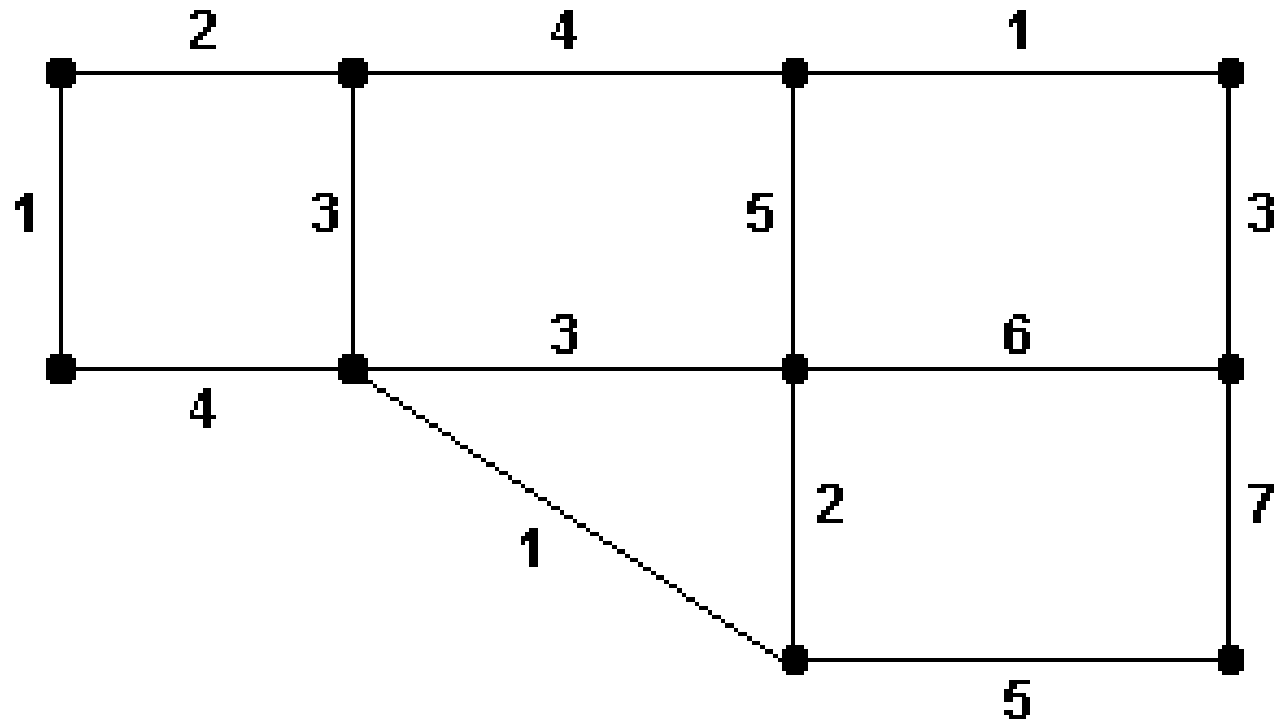
B) 24!

☒ C) 23

D) 276

11. Use Kruskal's algorithm to find the total weight of the minimum spanning tree:

- A) 47
- B) 25
- C) 22**
- D) 15



12. Using Kruskal's algorithm to find an MST, which edge should we choose third?

A) AC

B) AE

C) BD

D) DE

