

A

The figure shows two diagrams, labeled A and B, illustrating the construction of a graph G from a set of points A . In both diagrams, the set A consists of 6 points arranged in a hexagonal pattern. The left diagram shows a subgraph of G with 5 vertices and 4 edges, forming a triangle and a path. The right diagram shows a different subgraph of G with 5 vertices and 4 edges, also forming a triangle and a path, but with a different configuration of edges.

B

Figure B consists of two separate graphs, each with 6 vertices (black dots) and some edges (black lines).
The left graph has vertices arranged in a roughly rectangular shape. Edges connect the top-left vertex to the top-right vertex, the top-left vertex to the bottom-left vertex, and the bottom-left vertex to the bottom-right vertex. There is also an edge connecting the top-right vertex to the bottom-right vertex, forming a complete graph K4 on these four vertices. The top-right and bottom-right vertices are also connected to a single vertex on the far right.
The right graph has vertices arranged in a roughly rectangular shape. Edges connect the top-left vertex to the top-right vertex, the top-left vertex to the bottom-left vertex, and the bottom-left vertex to the bottom-right vertex. There is also an edge connecting the top-right vertex to the bottom-right vertex, forming a complete graph K4 on these four vertices. The top-right and bottom-right vertices are also connected to a single vertex on the far right.

C

The left diagram shows a set of 6 points. A graph structure is formed by connecting the following pairs of points: (1, 2), (2, 3), (3, 1), (1, 4), and (1, 5). The right diagram shows a set of 6 points. A graph structure is formed by connecting the following pairs of points: (1, 2), (2, 3), (3, 1), (1, 4), and (1, 5). The edge (1, 4) is highlighted in red.

D

Graph D: A graph with 6 vertices and 5 edges. It consists of a triangle (3 vertices, 3 edges) and a separate edge (2 vertices, 1 edge) connecting two vertices that are not part of the triangle.

Graph E: A graph with 6 vertices and 5 edges. It consists of a triangle (3 vertices, 3 edges) and a separate edge (2 vertices, 1 edge) connecting two vertices that are not part of the triangle.

E

The image shows two graphs, E and F, each with 6 vertices and 7 edges. Graph E is a planar graph with a cycle of length 3 and a path of length 3. Graph F is a planar graph with a cycle of length 3 and a path of length 3.