

Elementary Division

1. Graph Theory

Draw a graph using the first letters of each person's name: Alice talks to Bob, Bob talks to Carol, Carol talks to Alice, Alice talks to Doug, and Doug talks to Eve. This is undirected since they talk both ways.

1.

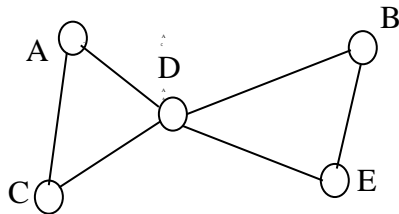
2. Graph Theory

Draw an undirected graph that has vertices $\{P, Q, R, S, T\}$ and edges $\{PQ, RS, ST, PT, QT, RQ, TR\}$.

2.

3. Graph Theory

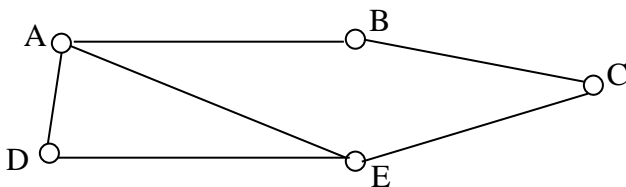
Given the following graph, how many paths of length 2 start at A?



3.

4. Graph Theory

Given the following graph, how many cycles exist?

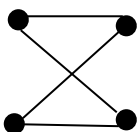


4.

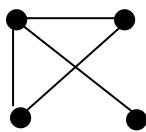
5. Graph Theory

Which of the following graphs are traversable?

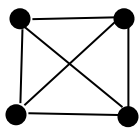
A.



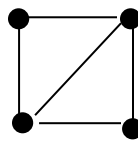
B.



C.



D.



5.