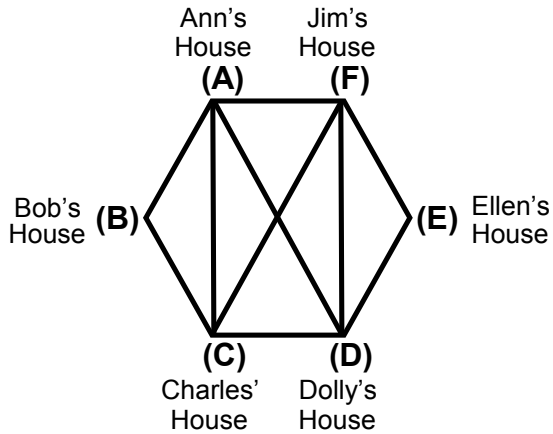


Vertex-Edge Homework Problems

Directions: Use the Vertex-Edge graph below to answer question 1.



NOTE:

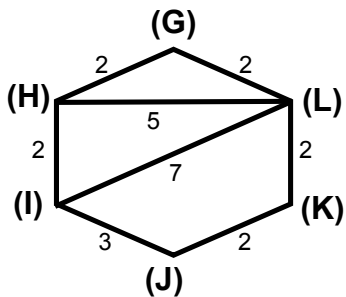
Use the letters on the vertices of graphs to show your paths.

Example: $C > B > A$ means that the path goes from C to B to A

1. List two paths from Charles' house (C) to Ellen's house (E)? Path 1 _____

Path 2 _____

Directions: Use the distances (Miles) on the Vertex-Edge graph below to answer questions 2 and 3.

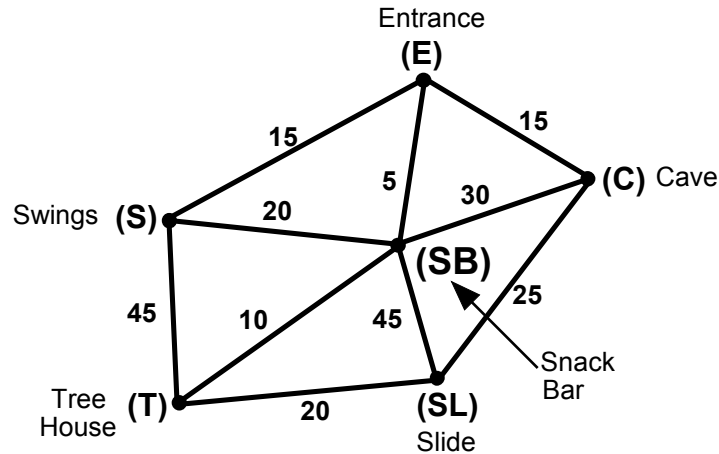


2. List two circuits that touch all of the vertices? **Circuit 1** _____

Circuit 2 _____

3. What is the shortest path from point H to point K? _____

Directions: The weighted Vertex-Edge graph below shows paths and the distances (in yards) between different attractions in a park. Use this information to answers questions 4 through 6.



4. What is the shortest distance from the Entrance (E) to the Slide (SL)? _____

5. What is the shortest path from the Swings (S) to the Cave (C)? _____

6. John wants to visit VE Park. He wants to come through the entrance, visit every attraction and get something to eat at the Snack Bar; he then wants to leave through the entrance.

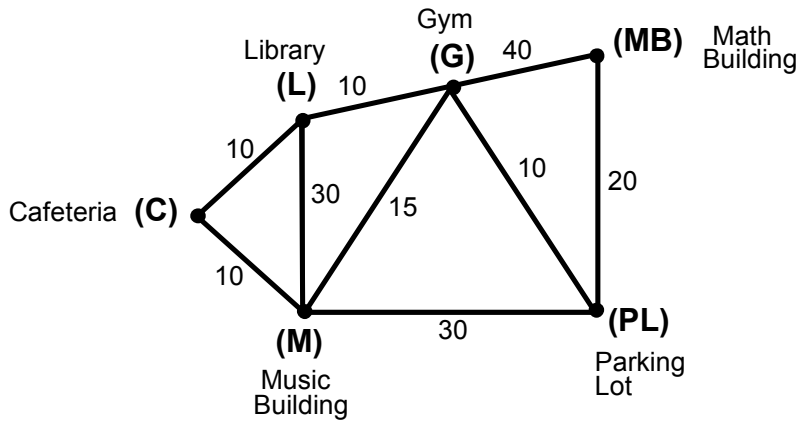
John wants to use the shortest path possible to see the attractions and stop at the Snack Bar.

a. Show the shortest route that John should take using the letters at the attractions and Snack Bar.

b. What is the total distance that Jack will walk to visit all the attractions and eat at the Snack Bar?

Directions: Use the information below to answer problem 7 and 8.

The vertex-edge graph below shows the time (in minutes) that it takes to travel paths between these buildings at School.

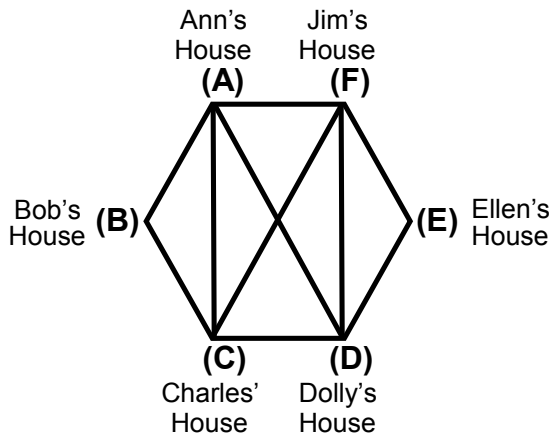


7. What is the fastest path from the Music Building (M) to the Math Building (MB)? _____

8. What is the fastest path from the Parking Lot (PL) to the Cafeteria (C)? _____

- a. Parking lot → Music Building → Cafeteria
- b. Parking lot → Gym → Library → Cafeteria
- c. Parking lot → Math Building → Gym → Library → Cafeteria
- d. Parking lot → Gym → Music Building → Cafeteria

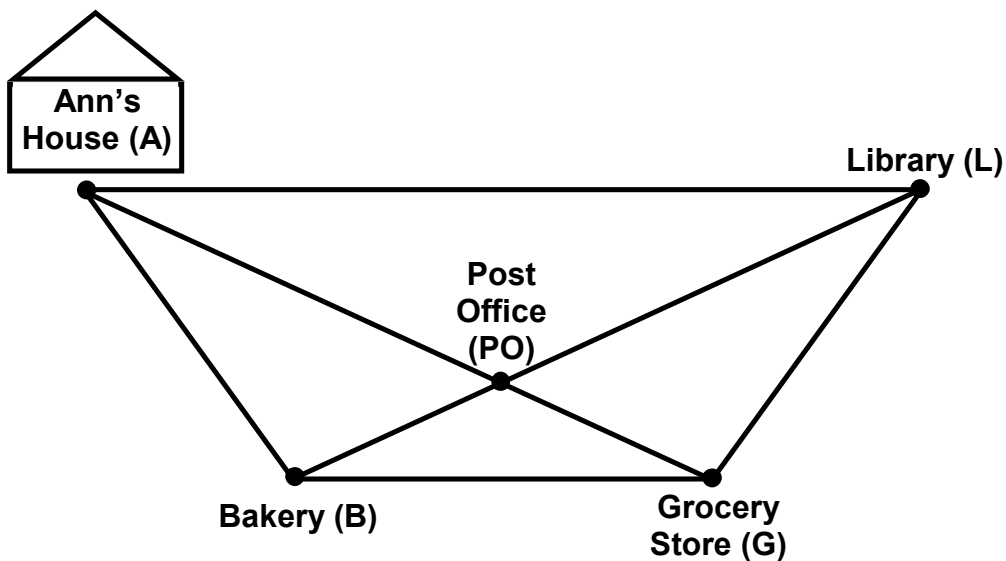
Directions: Use the Vertex-Edge graph below to answer question 9.



9. Which is not a path from Ann's house to Dolly's house ? _____

- a. Ann's House → Bob's House → Charles' House → Jim's House → Dolly's House
- b. Ann's House → Charles' House → Jim's House → Dolly's House
- c. Ann's House → Dolly's House
- d. Ann's House → Ellen's House → Dolly's House

Directions: Use the Vertex-Edge graph below to answer question 10.

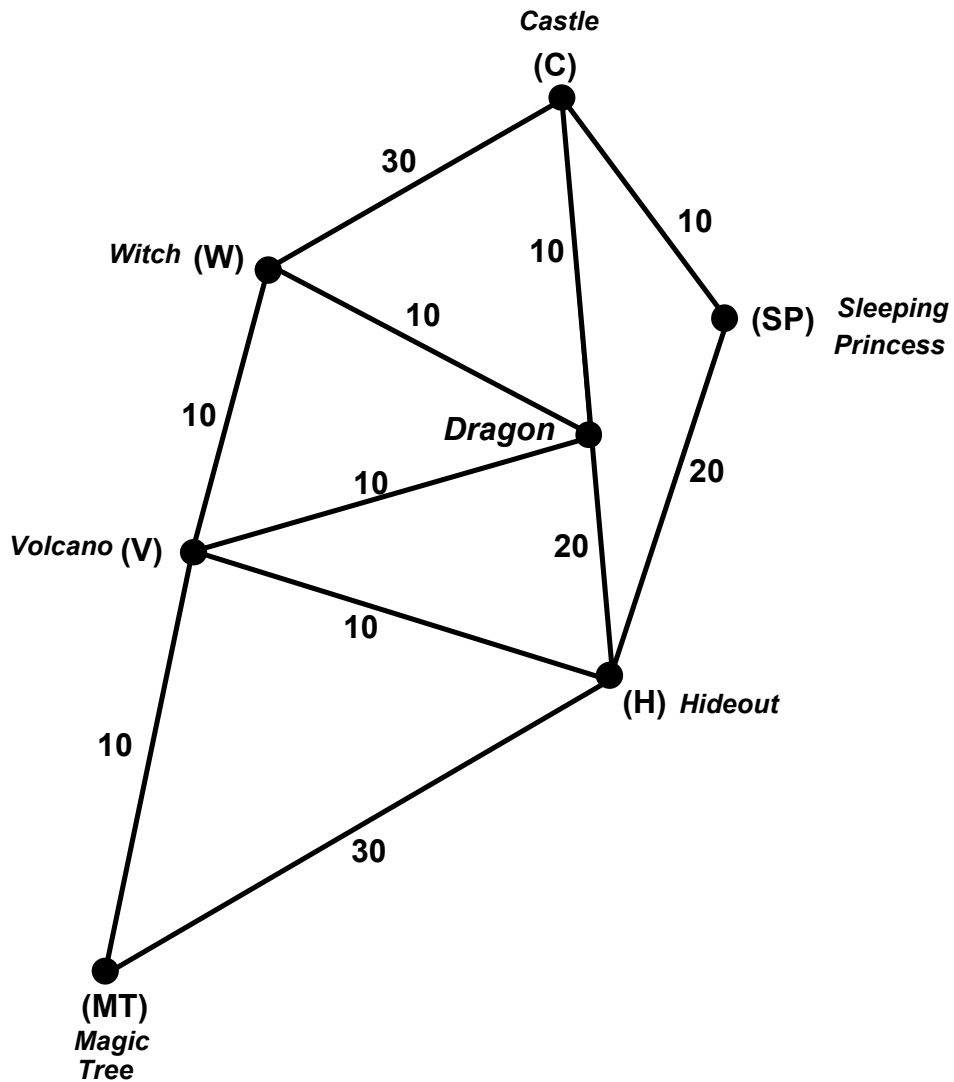


10. Ann is going to run some errands. She wants to visit all 4 of the places shown on the map but only once. She then wants to return home. What is a path she can use to run her errands? Use the letters to show the path Ann takes to run her errands and return home.

Directions: Use the information below to answer problem 11.

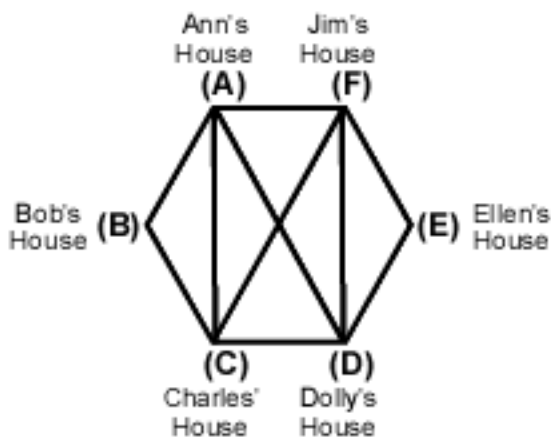
11. The vertex-edge graph below shows the paths and times (in minutes)between these places in the enchanted forest.

What is the fastest time to get from the Castle (C) to the Magic Tree (MT)?



Vertex-Edge Homework Problems with Answers

Directions: Use the Vertex-Edge graph below to answer question 1.



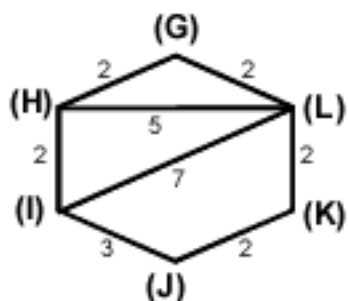
NOTE:

Use the letters on the vertices of graphs to show your paths.

Example: $C > B > A$ means that the path goes from C to B to A

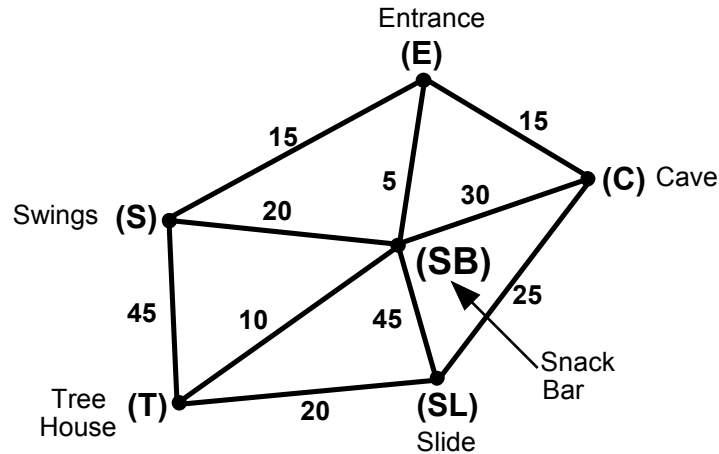
1. List two paths from Charles' house (C) to Ellen's house (E)?
- Path 1 $C > F > E$
- Path 2 $C > D > E$

Directions: Use the distances (Miles) on the Vertex-Edge graph below to answer questions 2 and 3.



2. List two circuits that touch all of the vertices?
- Circuit 1 $I > H > G > L > K > J > I$
- Circuit 2 $G > H > I > J > K > L > G$
3. What is the shortest path from point H to point K? $H > G > L > K = 6 \text{ Miles}$

Directions: The weighted Vertex-Edge graph below shows paths and the distances (in yards) between different attractions in a park. Use this information to answers questions 4 through 6.



4. What is the shortest distance from the Entrance (E) to the Slide (SL)? 35 Yards
E > SB > T > SL

5. What is the shortest path from the Swings (S) to the Cave (C)? 30 Yards
S > E > C

6. John wants to visit VE Park. He wants to come through the entrance, visit every attraction and get something to eat at the Snack Bar; he then wants to leave through the entrance.

John wants to use the shortest path possible to see the attractions and stop at the Snack Bar.

a. Show the shortest route that John should take using the letters at the attractions and Snack Bar.

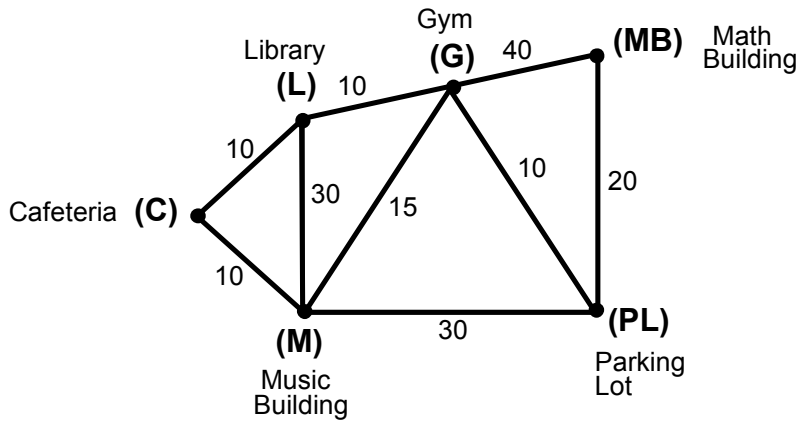
E > S > B > T > SL > C > E

b. What is the total distance that Jack will walk to visit all the attractions and eat at the Snack Bar?

105 Yards

Directions: Use the information below to answer problem 7 and 8.

The vertex-edge graph below shows the time (in minutes) that it takes to travel paths between these buildings at School.

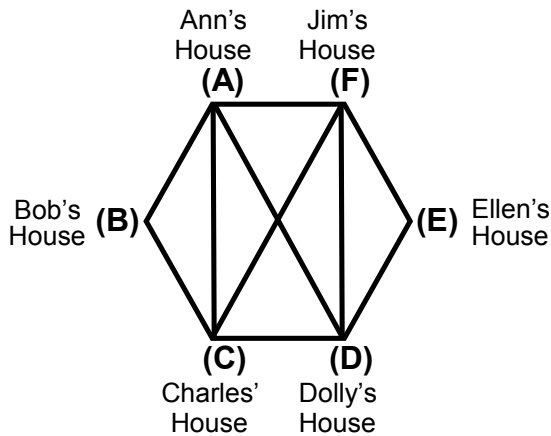


7. What is the fastest path from the Music Building (M) to the Math Building (MB)? 45 Miles
M > G > PL > MB

8. What is the fastest path from the Parking Lot (PL) to the Cafeteria (C)? b.

- a. Parking lot → Music Building → Cafeteria
- b. Parking lot → Gym → Library → Cafeteria
- c. Parking lot → Math Building → Gym → Library → Cafeteria
- d. Parking lot → Gym → Music Building → Cafeteria

Directions: Use the Vertex-Edge graph below to answer question 9.

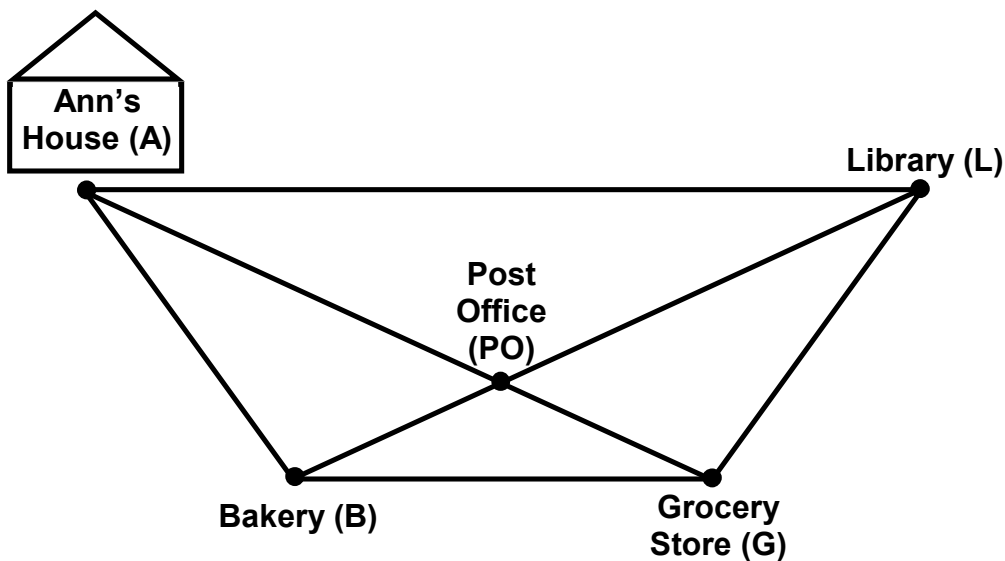


9. Which is not a path from Ann's house to Dolly's house ?

d.

- a. Ann's House → Bob's House → Charles' House → Jim's House → Dolly's House
- b. Ann's House → Charles' House → Jim's House → Dolly's House
- c. Ann's House → Dolly's House
- d. Ann's House → Ellen's House → Dolly's House

Directions: Use the Vertex-Edge graph below to answer question 10.



10. Ann is going to run some errands. She wants to visit all 4 of the places shown on the map but only once. She then wants to return home. What is a path she can use to run her errands? Use the letters to show the path Ann takes to run her errands and return home.

A > B > PO > G > L > A

Directions: Use the information below to answer problem 11.

11. The vertex-edge graph below shows the paths and times (in minutes)between these places in the enchanted forest.

What is the fastest time to get from the Castle (C) to the Magic Tree (MT)?

30 Minutes

C > D > V > MT

