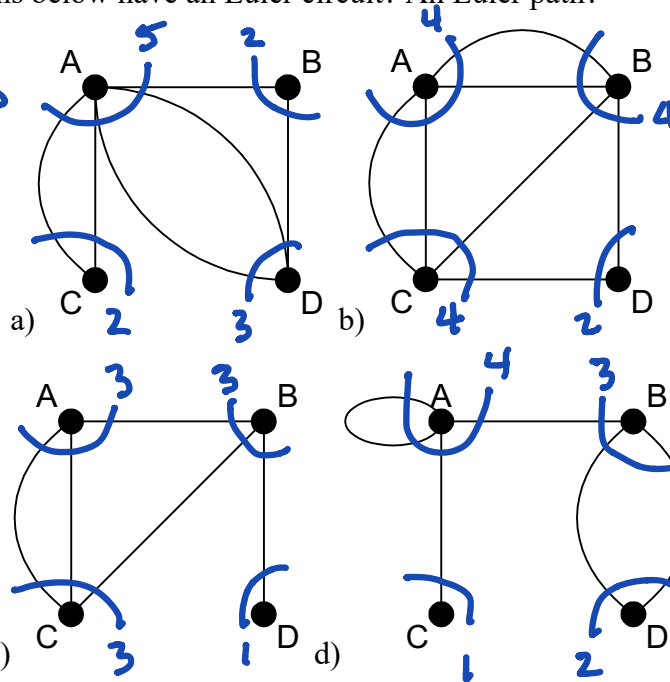


Exercise set 12.1: Graph Theory

1. Which of the graphs below have an Euler circuit? An Euler path?

Two odd vertices
 $\therefore$ path but no circuit (path must start/finish on A/D).

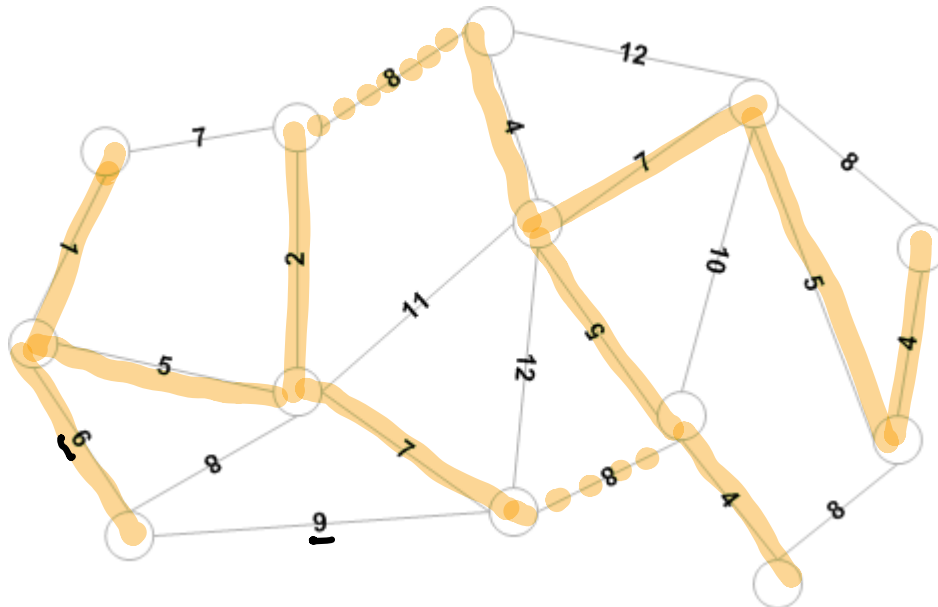
More than two odd vertices
 $\therefore$ no path (and no circuit)



All even vertices
 $\therefore$ both path and circuit

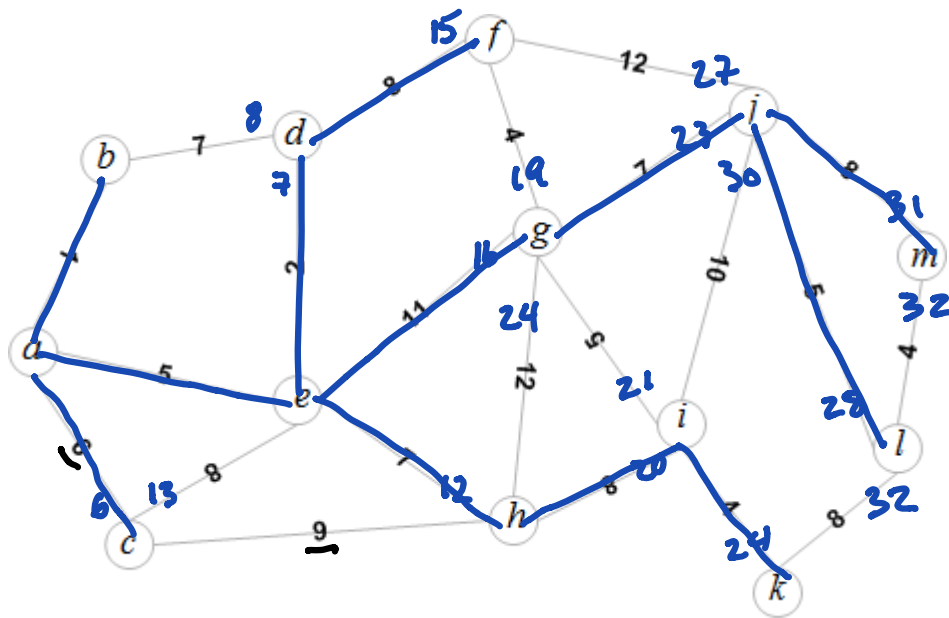
Two odd vertices
 $\therefore$ path but no circuit (must start/finish on B/C)

2. Find the minimal spanning tree for the graph:



3. What is the shortest route from *a* to *m*?

ab 1
ae 5
ac 6
aed 7
ah 12
aedf 15
ae 16
ah 20
ae 23
ah 24
ae 28



aegjm 31 ★ shortest route.