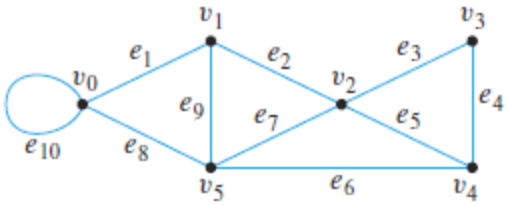
Assignment 9 Part 2: Set 10.2 : 2, 14

2. In the graph below, determine whether the following walks are trails, paths, closed walks, circuits, simple circuits, or just walks.

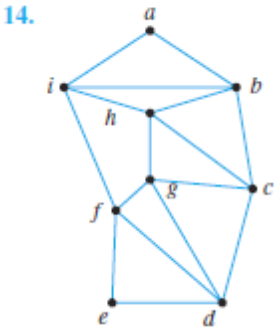
a. $v_1e_2v_2e_3v_3e_4v_4e_5v_2e_2v_1e_1v_0$
b. $v_2v_3v_4v_5v_2$
c. $v_4v_2v_3v_4v_5v_2v_4$
d. $v_2v_1v_5v_2v_3v_4v_2$
e. $v_0v_5v_2v_3v_4v_2v_1$
f. $v_5v_4v_2v_1$



a. walks
b. simple circuit
c. closed walk
d. simple circuit
e. trail
f. path

14. Determine which of the graphs in 12–17 have Euler circuits. If the graph does not have an Euler circuit, explain why not. If it does have an Euler circuit, describe one.

All vertices have an even amount of degrees.



a = 2 = (i, a), (a, b)
b = 4 = (a, b), (h, b), (i, b), (b, c)
c = 4 = (b, c), (h, c), (g, c), (c, d)
d = 4 = (c, d), (g, d), (f, d), (d, e)
e = 2 = (d, e), (e, f)
f = 4 = (e, f), (d, f), (g, f), (f, i)
g = 4 = (f, g), (d, g), (c, g), (g, h)
h = 4 = (g, h), (c, h), (b, h), (i, h)
i = 4 = (f, i), (h, i), (b, i), (i, a)

since they have even amount of degrees, by theorem 10.2.2, this graph has a Euler circuit.