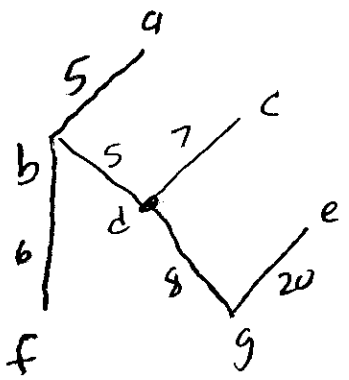
8.1c page 387 exercise 47-53 odd

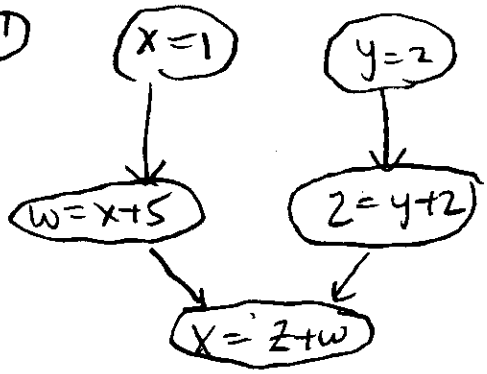
47 (5) I deleted bk, gf, bg, hg & hi

(49)



5+5+6+7+8+20
16 23 31 = (51)

(51)



(53) f is not <u>one-to-one</u>

all graphs with 2 edges → 2

There are at least two different Graphs with 2 edges

i.e. $f(G_1) = f(G_2)$ and $G_1 \neq G_2$

<u>f is onto:</u> see Back of book.

Proof for $n = 0$, any graph with no edges

- for $n > 0$, choose a graph with $n+1$ vertices & the set of edges $\{(v_0, v_1), (v_1, v_2), \ldots (v_n, v_{n+1})\}$ for n edges