2.23 The table in Fig. P2.23(a) gives the relationship between the terminal voltage and current of the practical constant voltage source shown in Fig. P2.23(b).

a) Plot v_s versus i_s.

b) Construct a circuit model of the practical source that is valid for $0 \leq i_s \leq 24$ A, based on the equation of the line plotted in (a). (Use an ideal voltage source in series with an ideal resistor.)

c) Use your circuit model to predict the current delivered to a 1 Ω resistor connected to the terminals of the practical source.

d) Use your circuit model to predict the current delivered to a short circuit connected to the terminals of the practical source.

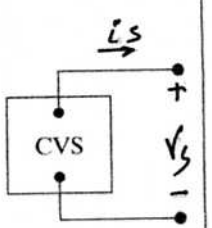
e) What is the actual short-circuit current?

f) Explain why the answers to (d) and (e) are not the same.

Figure P2.23

v_s (V)	i_s (A)
24	0
22	8
20	16
18	24
15	32
10	40
0	48

(a)



(b)