Ex:

Find the value of current, $i_1$, for each of the above circuits.

**Sol’n:**

a) Since there is an open circuit, the current must be zero.

$$i_1 = 0 \text{ A}$$

b) If there is a current source in a branch, (components in series), the current everywhere in that branch must be the same as the current source.

$$i_1 = 1 \text{ A}$$

c) If there is a current source in a branch, (components in series), the current everywhere in that branch must be the same as the current source.

$$i_1 = 6 \text{ A}$$

d) The current must match the current source, but the polarity is inverted since the arrow in the current source is in the opposite direction of $i_1$.

$$i_1 = -6 \text{ A}$$

e) If there is a current source in a branch, (components in series), the current everywhere in that branch must be the same as the current source.

$$i_1 = 3 \text{ A}$$