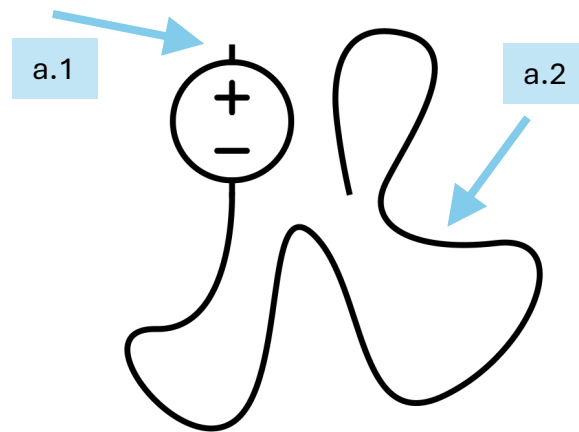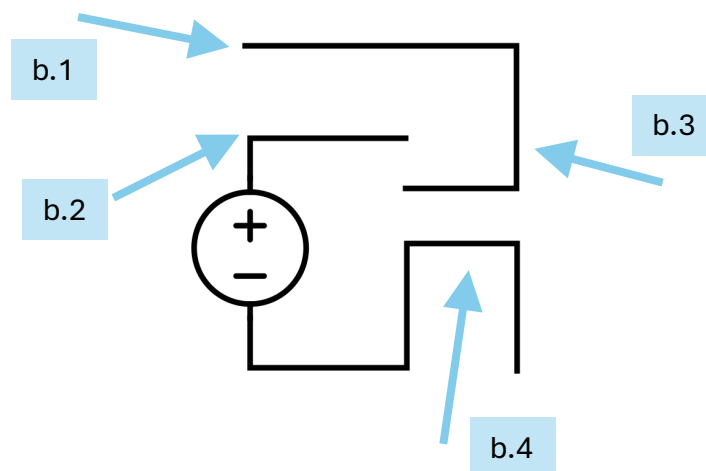For all of these questions, <u>do not</u> abstract voltage into symbols such as "0" and "1." All voltages should be expressed as "logic low voltage" or "logic high voltage" (but you can just write "low" and "high" for simplicity). If it is impossible to determine the voltage based on the schematic (i.e., without doing something like measuring the voltage in real life), you can express that fact with the word "unknown."
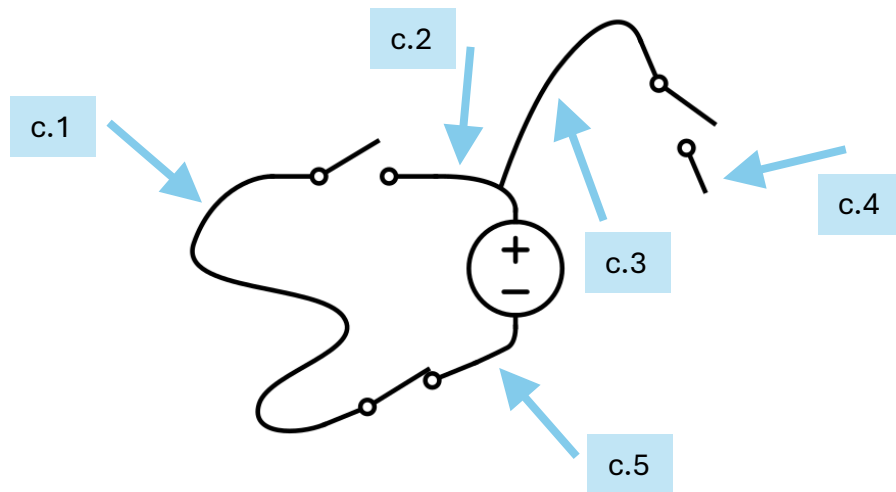
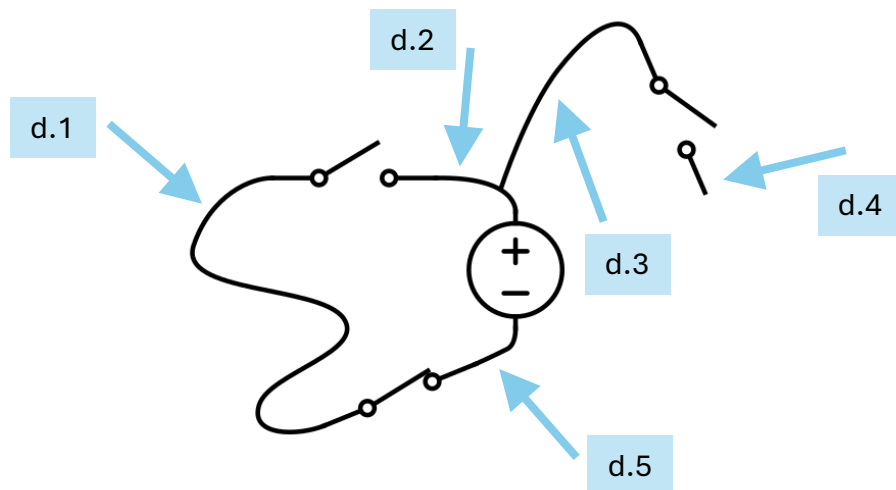a) What is the voltage at each of the indicated locations in the circuit?

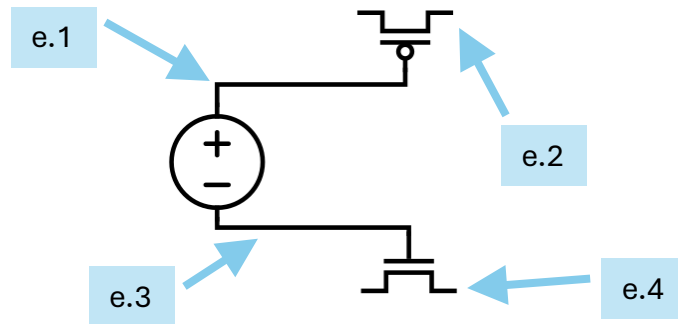b) What is the voltage at each of the indicated locations in the circuit?

c) What is the voltage at each of the indicated locations in the circuit if every switch is in its normal position?
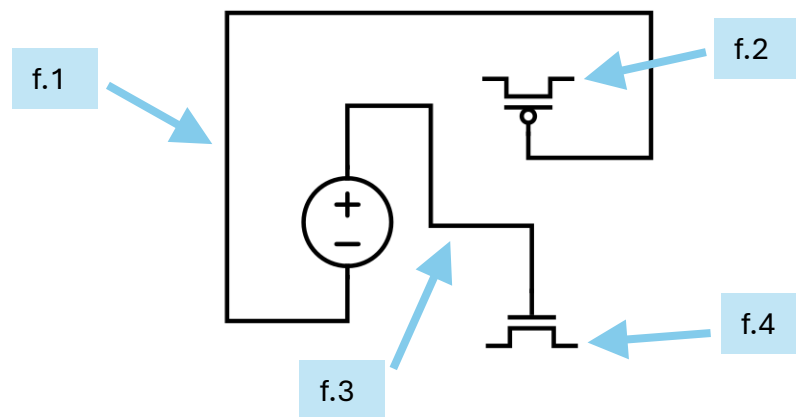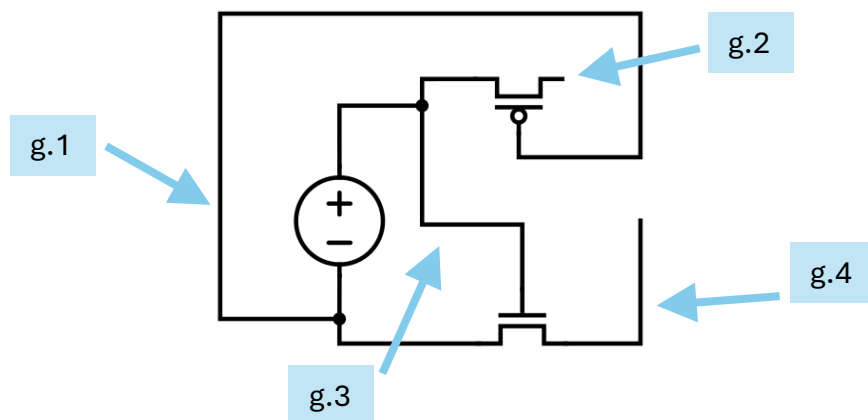
c.1

c.2

c.3

c.4

c.5

d) What is the voltage at each of the indicated locations in the circuit if every switch is in its active position?

d.1

d.2

d.3

d.4

d.5

e) What is the voltage at each of the indicated locations in the circuit?

e.1

e.2

e.3

e.4

f) What is the voltage at each of the indicated locations in the circuit?

f.1

f.2

f.3

f.4

g) What is the voltage at each of the indicated locations in the circuit?

g.1

g.2

g.3

g.4

h) What is the voltage at each of the indicated locations in the circuit?

h.1

Vcc

h.2

i) What is the voltage at each of the indicated locations in the circuit?

i.1

i.2

Vcc

i.4

Vcc

i.3

j) What is the voltage at each of the indicated locations in the circuit?
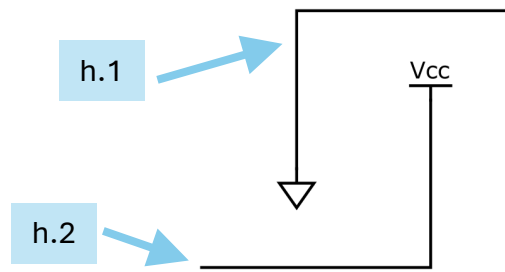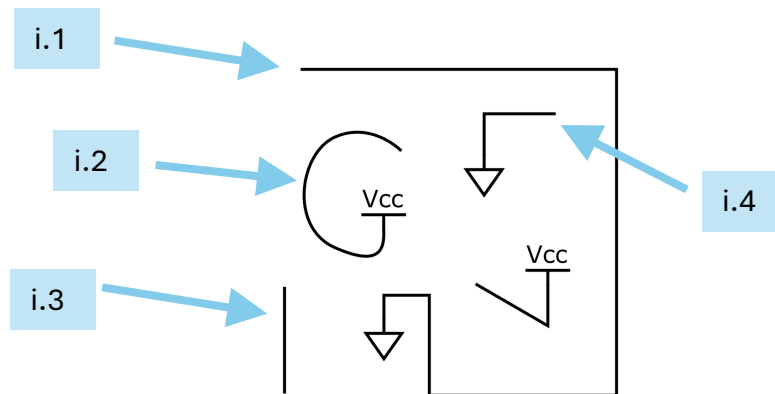
Vcc

Vcc

j.1

j.2

j.3

k) What is the voltage at each of the indicated locations in the circuit?

l) What is the voltage at each of the indicated locations in the circuit?

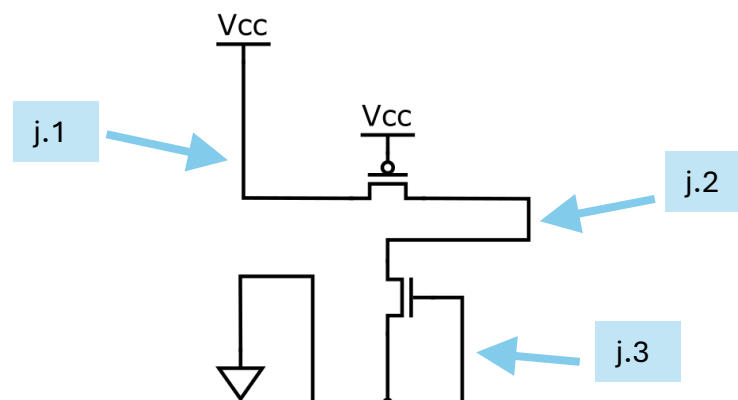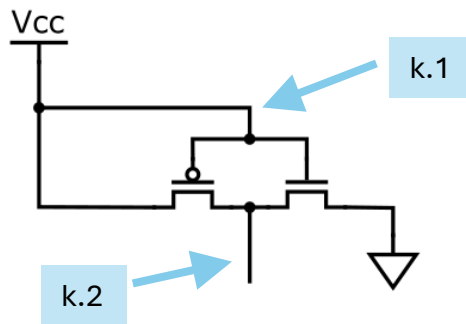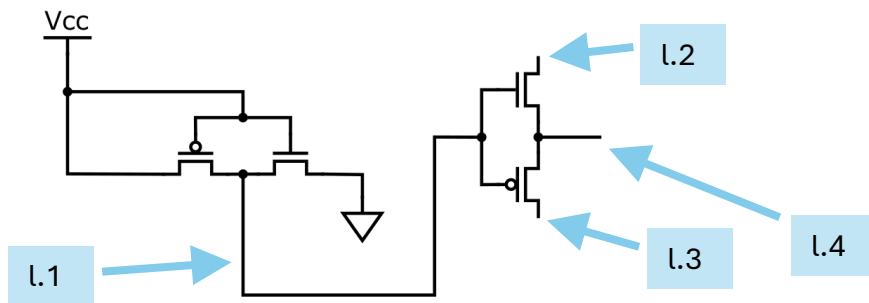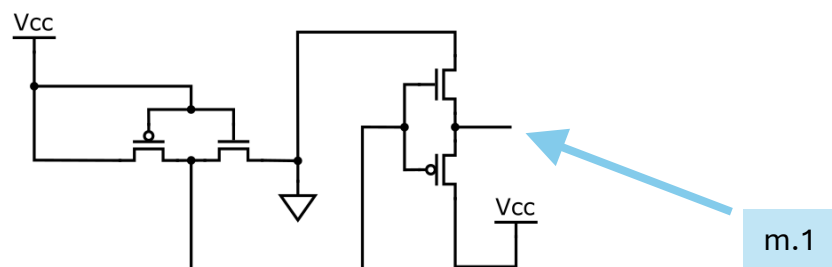m) What is the voltage at each of the indicated locations in the circuit?

n) What is the voltage at each of the indicated locations in the circuit?

n.1