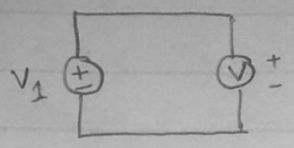
EE49 Prelab

a) Circuit A

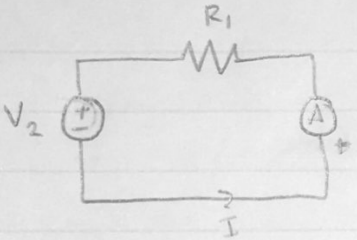


$V_1 - V = 0$ by KVL

$V_1 = V = 3V$

$\boxed{V = 3V}$

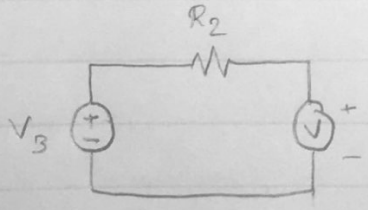
Circuit B



$A = \frac{\text{voltage}}{\text{resistance}} = 3V / 5k\Omega$

$\boxed{A = 0.6mA}$

Circuit C

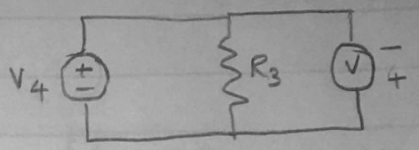


$V_3 - V = 0$ by KVL

$V_3 = V$

$\boxed{V = 3V}$

Circuit D

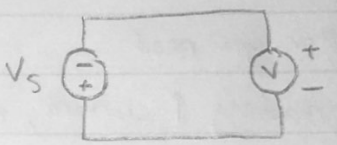


$V_4 + V = 0$ by KVL

$V_4 = -V$

$\boxed{V = -3V}$

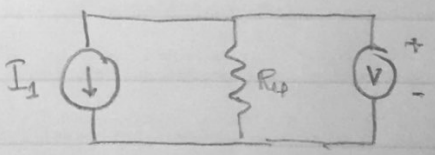
Circuit E



$V_5 + V = 0$ (KVL)

$\boxed{V = -3V}$

Circuit F



$V = IR$

$= I_1 \cdot 0$ (open wire)

$= 0V$

$\boxed{V = 0V}$

EE49 Prelab

b) Circuit A

$P = IV = 0 \cdot V = 0$

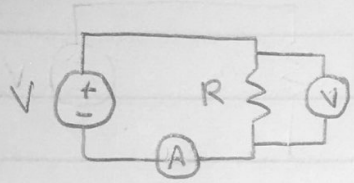
$\boxed{P = 0\,W}$

Circuit B

$P = IV = I \cdot 0 = 0$

$\boxed{P = 0\,W}$

$P = IV = 3.8V \cdot 40mA = \boxed{152mW}$



For each resistor you need

→ voltage reading & current, everything else is calculable

4.2 Reading

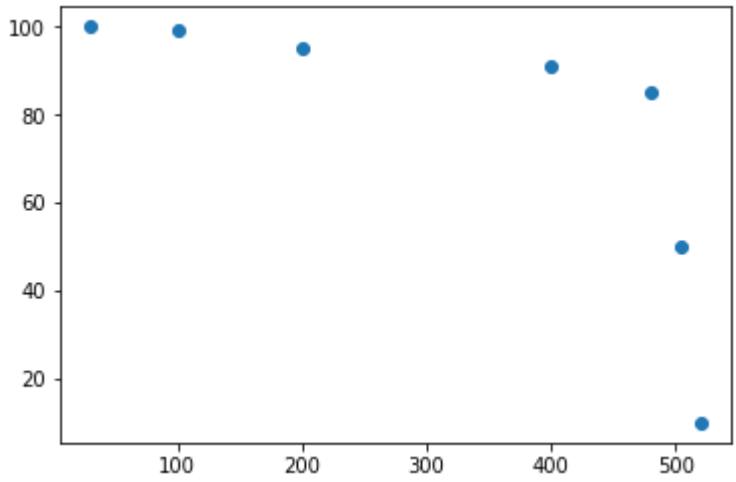
a) The power rails are not connected.

b) 60/40 Solder - 370°C

Lead-free Solder - 400°C

In [2]:
```
import matplotlib.pyplot as plot

voltage = [30, 100, 200, 400, 480, 505, 520]
current = [100, 99, 95, 91, 85, 50, 10]

plot.scatter(voltage, current)
```

Out[2]:
```
<matplotlib.collections.PathCollection at 0x28a204bef28>
```