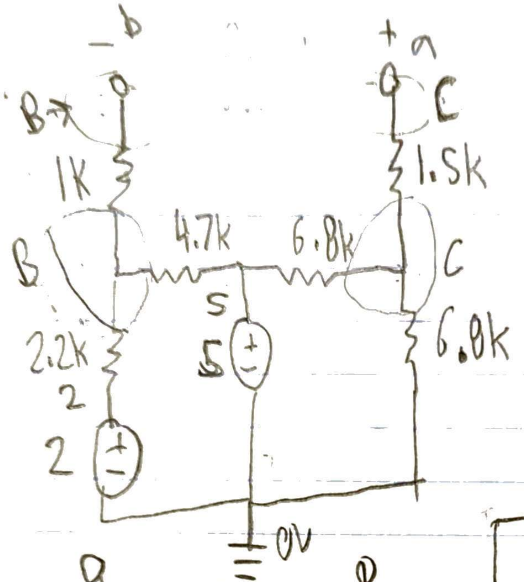
10.625 MΩ Watch out for 6.8's

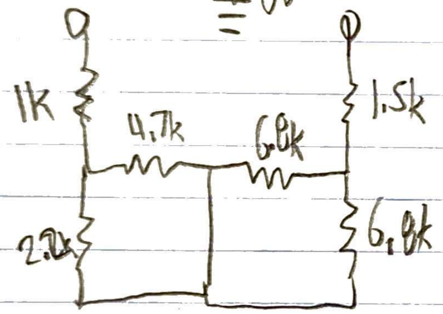
$\frac{5}{2}$ $\frac{68}{23}$

$V_L = C - B = -0.457\text{V}$



$$\frac{B-5}{4.7k} + \frac{B-2}{2.2k} = 0$$

$$\frac{C-5}{6.8k} + \frac{C-0}{6.8k} = 0$$

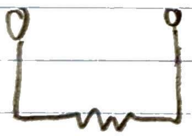


$R_{measured}$: 7.353k - 0.6% error

$V_{measured}$: -0.452V 1.1% error

$R_{theoretical}$: 7.4k

$V_{theoretical}$: -0.457V

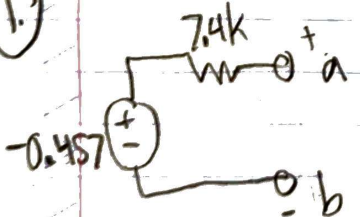


$R_{Th} = 7.40k$

$R_L = 6.53k$

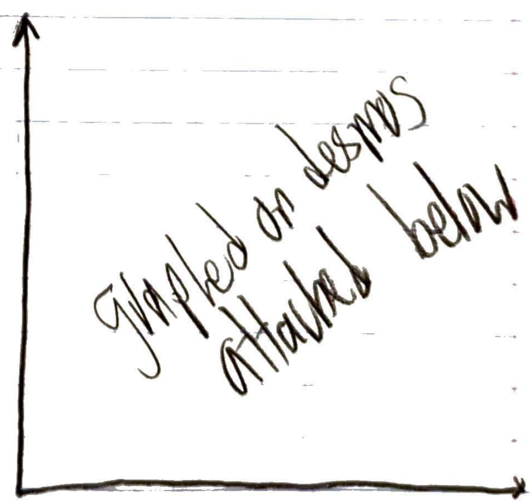
$V_{measured}$: -0.35V

1.



$$P = \frac{V_L^2}{R_L}$$

Pts: (6.53, -0.35) (32.18, -0.944)
(7.9, -0.386) (46.07, -1.474)
(10.4, -0.451) (43.23, -2.414)
(1.75, -0.124)
(43.74, -2.791)

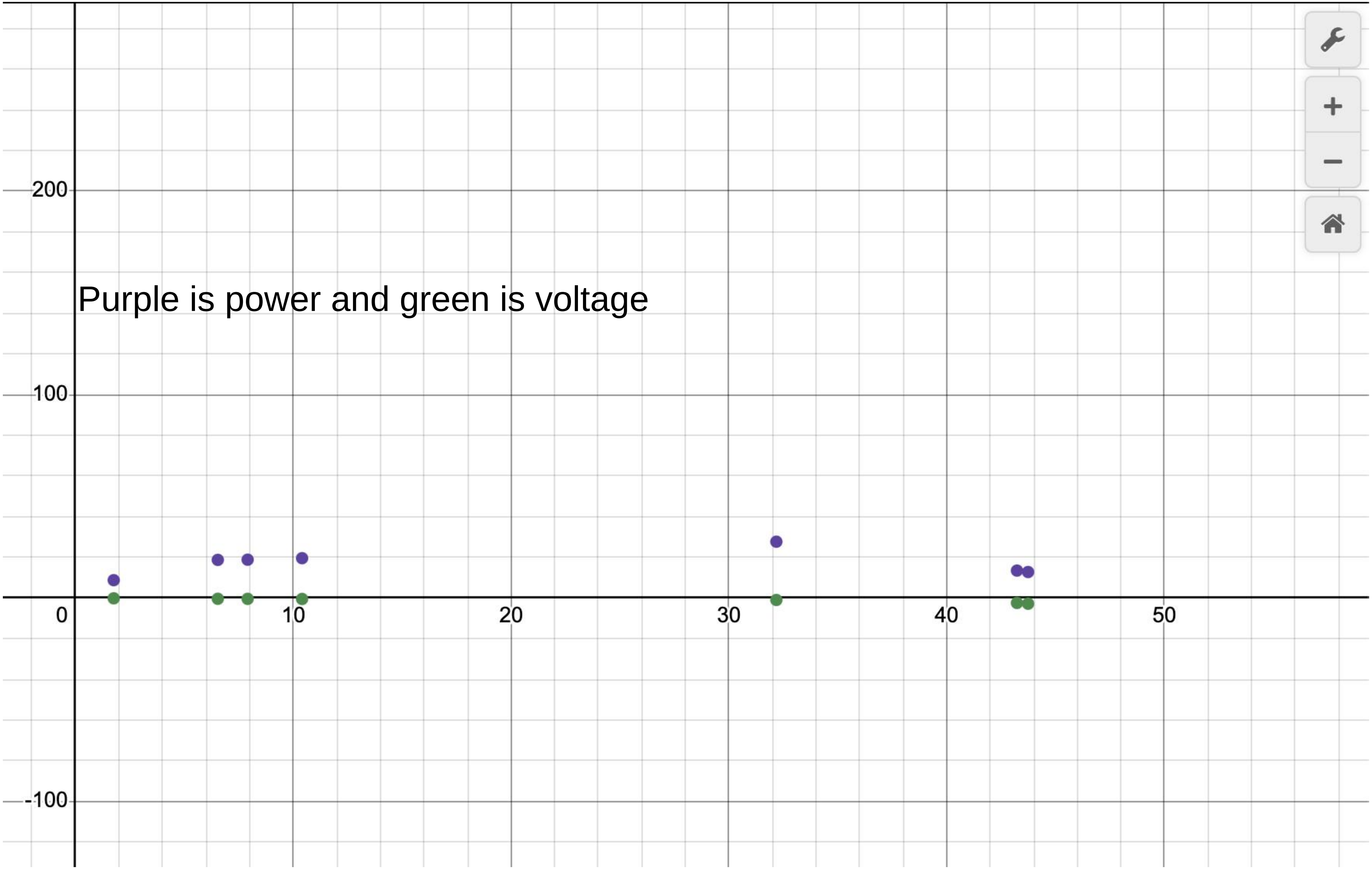


graphed on desmos attached below

Our estimate of the load resistance to draw the most current led us to the conclusion that to maximise the power we would have to

$\boxed{\text{make } R_L = \text{to the thevanin resistance.}}$

If you differentiate the expression P=V^2/(Rth+RL) and set equal to 0 and solve we found that we maximise the Power to the load when RL is equal to the thevanin resistance.


Purple is power and green is voltage
200
100
0
-100
10
20
30
40
50