CSET102 Quiz 1 Solutions.

(1)

$$R_s = R + R + R = 3R$$

$$1/R_p = \frac{1}{R} + \frac{1}{R} + \frac{1}{R} = \frac{3}{R} \Rightarrow R_p = \frac{R}{3}$$

$$\frac{R_s}{R_p} = \frac{3R}{\frac{R}{3}} = \underline{9}$$

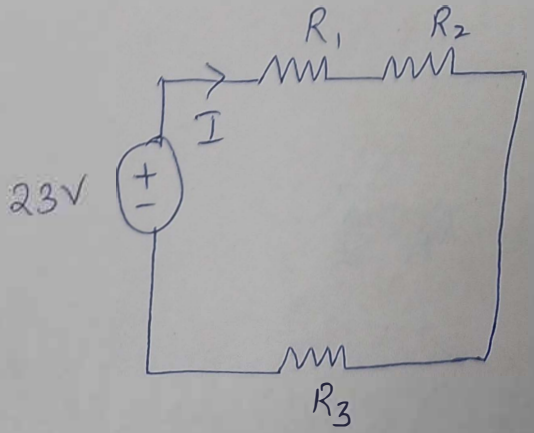
(2) $P_{R_3} = V_{R_3} \cdot I_{R_3}$

$V_{R_3} = V_{R_{L_2}} = 52V.$

$I_{R_3} = 73 - 18 - 24 = \underline{31mA.}$

$P_{R_3} = (52V)(31mA) = 1612mW = \underline{1.612W.}$

(3)



$$I = \frac{V}{R_1 + R_2 + R_3} = \frac{23}{49+34+21} = \frac{23}{104}$$

$= 0.2211A$

$= \underline{221.1mA}$

However in the question, direction of current is opposite to the direction considered in the solution

So $\underline{I = -221.1mA.}$