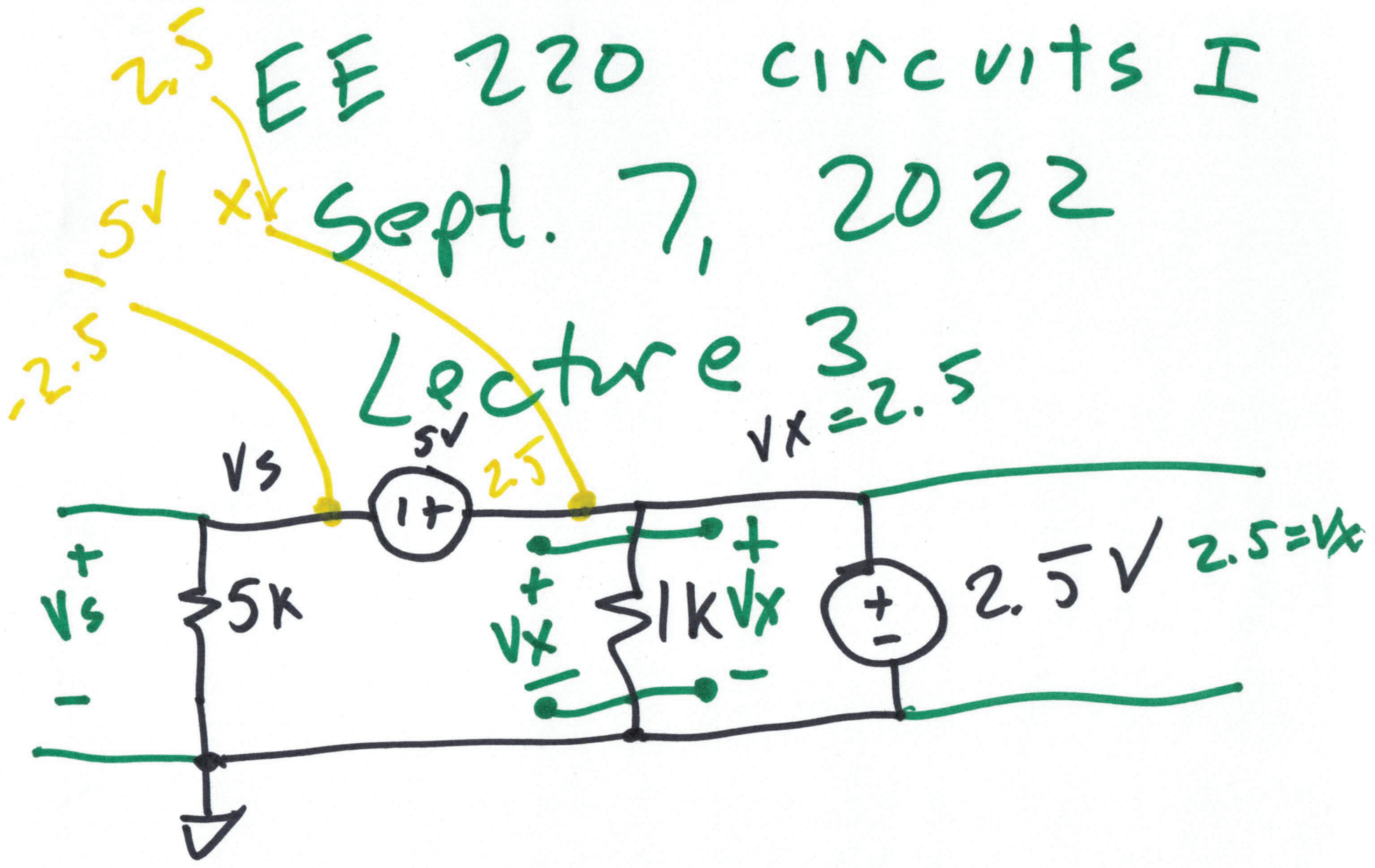
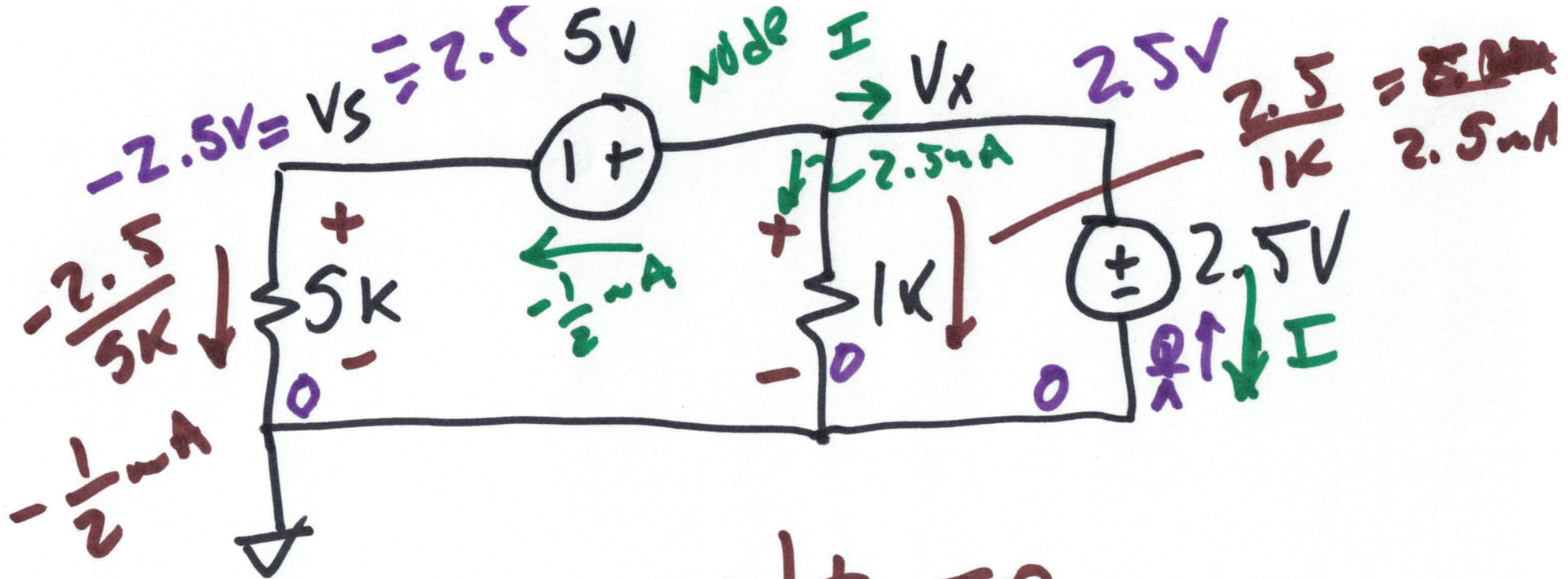


EE 220 circuits I

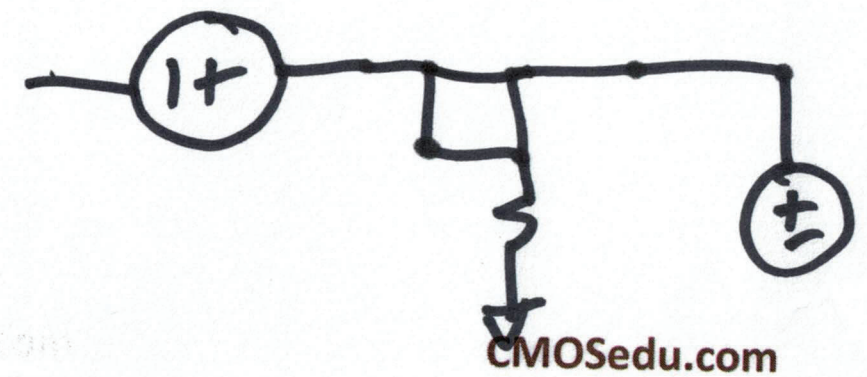
Sept. 7, 2022

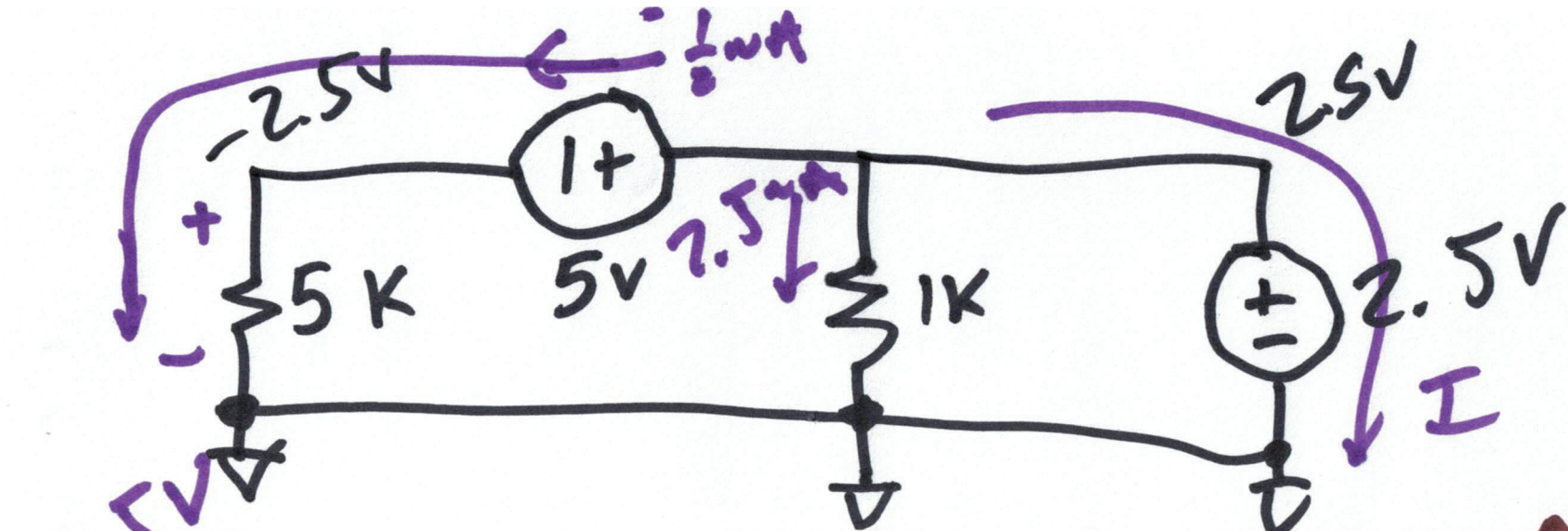
Lecture 3
 $V_x = 2.5$





$I \downarrow \uparrow \frac{v}{R} = IR$
 Ohm's Law
~~$\frac{1}{2}\mu A = 2.5\mu A + I$
 $I = -2\mu A$~~

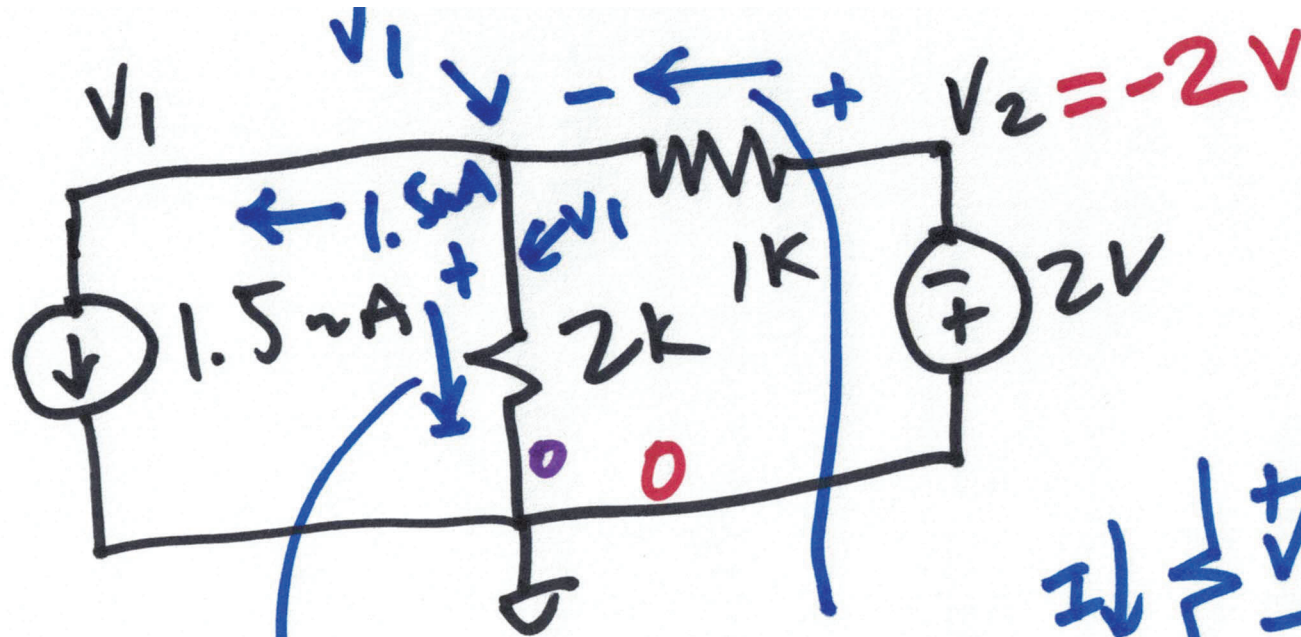




$$-\frac{1}{2} \mu\text{A} + 2.5 \mu\text{A} + I = 0$$

$$I = -2 \mu\text{A}$$

5)



$$\frac{V_1 - 0}{2k} \quad \frac{-2 - V_1}{1k}$$

$$1.5 \text{ mA} + \frac{V_1}{2k} = \frac{-2 - V_1}{1k}$$

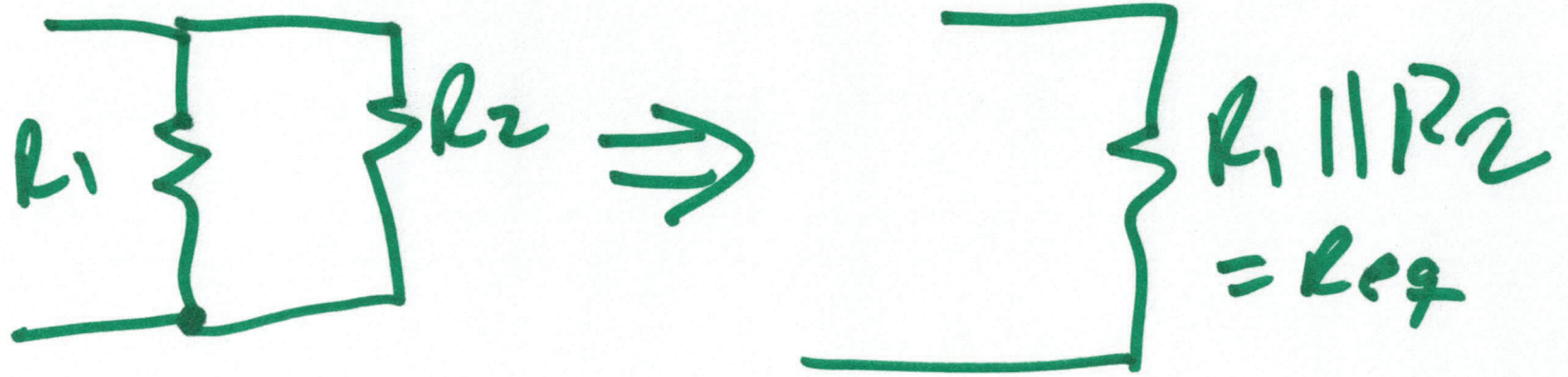
$$3V + V_1 = -4V - 2V_1$$

$$3V_1 = -7$$

$$V_1 = -\frac{7}{3}$$

$$= -2.3333$$

4)

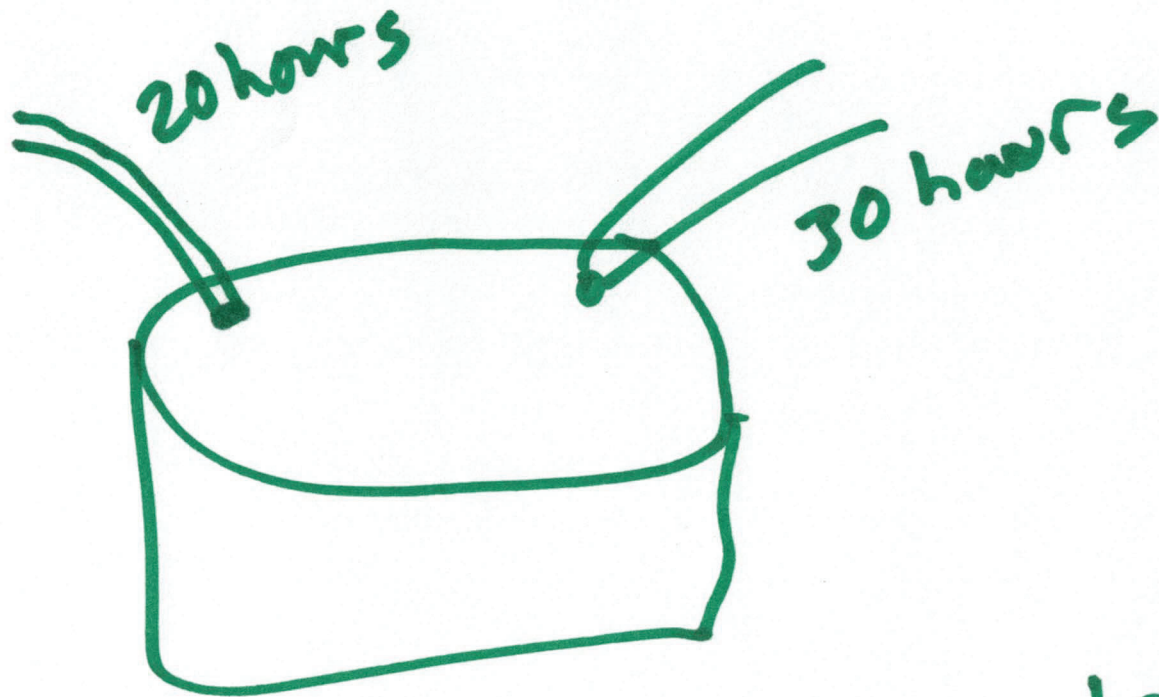


$$= \frac{1}{\frac{1}{R_1} + \frac{1}{R_2}}$$

$$\frac{R_1 R_2}{R_1 + R_2}$$

$$= \frac{1}{\frac{1}{R_1} + \frac{1}{R_2}} \cdot \frac{R_1 R_2}{R_1 R_2}$$

5)



$$\frac{1 \text{ pool}}{\text{TOT}} = \frac{1 \text{ pool}}{20} + \frac{1 \text{ pool}}{30 \text{ hours}}$$

$$\frac{1}{\text{TOT}} = \frac{1}{20} + \frac{1}{30} = \frac{20 \cdot 30}{20 + 30} = \frac{600}{50} = 12 \text{ hours}$$

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