

Name: <b>Allison Jones</b>	Period: <b>1</b>	Date Due: <b>8/20/2018</b>
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**PREAP PHYSICS**

**HW- 4b**

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**INSTRUCTIONS:**

- Always **SHOW WORK** for credit
- You must **SHOW EVERY FORMULA YOU ARE USING** before you start substituting any values.
- Use 8½- by-11 paper and pencil only
- Clearly **SEPARATE** your answers with **STRAIGHT LINES**
- **BOX** all final answers

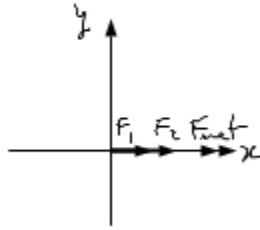
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**Do p. 457ff, #28, 36, 40, 44, 48, 54**

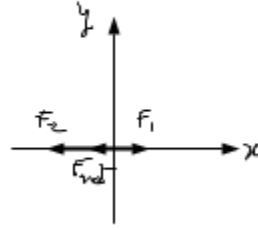
SAMPLE

#28, p. 457

① First Situation:



Second Situation:



② 
$$\begin{cases} F_1 + F_2 = 334 \text{ N} \\ F_1 - F_2 = 106 \text{ N} \end{cases} \leftarrow \text{solve the system for } F_1 \text{ \& } F_2.$$

$$2F_1 = 440 \Rightarrow F_1 = 220 \text{ N, to the RIGHT}$$

$$F_1 + F_2 = 334 \Rightarrow F_2 = 334 - F_1 = 334 - 220$$

$$F_2 = 114 \text{ N} \left\{ \begin{array}{l} \text{to the RIGHT for 1st situation} \\ \text{to the LEFT for 2nd situation} \end{array} \right.$$

#36, p. 458

Use Ohm's Law:

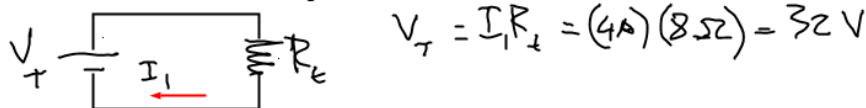
$$V_{AD} = I_2 R_{AD} = (2 \text{ A})(4 \Omega) \Rightarrow V_{AD} = 8 \text{ V}$$

$$V_{CB} = I_1 R_{CB} = (4 \text{ A})(2 \Omega) \Rightarrow V_{CB} = 8 \text{ V}$$

$$V_{AB} = ?$$

One way to find  $V_{AB}$  is to find the TERMINAL VOLTAGE, then use the Loop Rule.

• Terminal Voltage: use this equivalent circuit:



Now consider this equivalent circuit and use the Loop Rule:

