

CS Week 1 Homework.

Number systems.

1) $0x1AF \rightarrow$ Binary

$$1 \cdot 16 = 16$$

$$A \cdot 16 = 10 \cdot 16 = 160$$

$$F \cdot 16 = 15 \cdot 16 = 240$$

$$= 4001_{10}$$

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$$4001 : 2 = 2000 \quad R = 1$$

$$2000 : 2 = 1000 \quad R = 0$$

$$1000 : 2 = 500 \quad R = 0$$

$$500 : 2 = 250 \quad R = 0$$

$$250 : 2 = 125 \quad R = 0$$

$$125 : 2 = 62 \quad R = 1$$

$$62 : 2 = 31 \quad R = 0$$

$$31 : 2 = 15 \quad R = 1$$

$$15 : 2 = 7 \quad R = 1$$

$$7 : 2 = 3 \quad R = 1$$

$$3 : 2 = 1 \quad R = 1$$

an ten
nach ob.

$$\begin{array}{l} 2:2 \quad 1 \quad R = 1 \\ 2:2 \quad 0 \quad R = 0 \end{array} \Bigg| \text{von}$$

2) $\underbrace{110}_{13} \underbrace{11110}_{14} \rightarrow \text{hex} \Rightarrow DE$

3) $0x8E \rightarrow \text{Binär}$

$$8 = 8 \cdot 16^0 = 8$$

$$E = 14 \cdot 16^1 = 224 + 8 = 232 : 2 = 116 \quad R = 0$$

$$: 2 = 58 \quad R = 0$$

$$: 2 = 29 \quad R = 0$$

$$: 2 = 14 \quad R = 1$$

$$= 7 \quad R = 0$$

$$= 3 \quad R = 1$$

$$1 \quad R = 1$$

$$0 \quad R = 1$$

4) $31,301 \rightarrow \text{hex}$