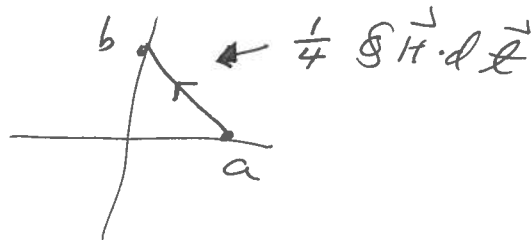
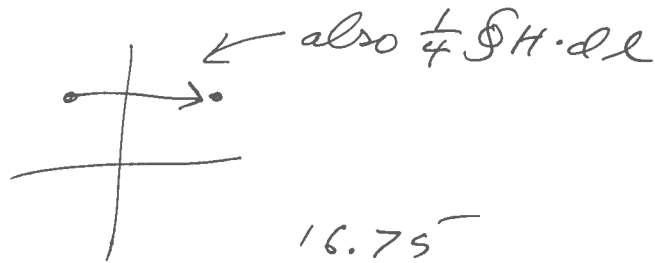


Ch 22 Ampere Law Calc ↗ easy questions.  
use symmetry  
plus  $\oint \vec{H} \cdot d\vec{\ell} = I$

①  $\oint \vec{H} \cdot d\vec{\ell} = I$   
 $= 4 \int_a^b \vec{H} \cdot d\vec{\ell}$   
 $\int_a^b \vec{H} \cdot d\vec{\ell} = \frac{1}{4} (48)$   
 $= 12 \text{ amps}$



②  $\int_a^b \vec{H} \cdot d\vec{\ell} = \frac{1}{4} 67$   
 $= 16.75$   
 $\approx 1.68 \times 10^1$

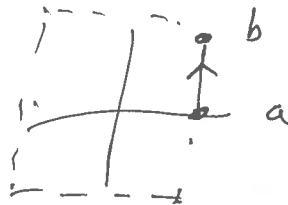


← also  $\frac{1}{4} \oint \vec{H} \cdot d\vec{\ell}$

$$\begin{array}{r} 16.75 \\ 4 \overline{) 67} \\ \underline{4} \phantom{0} \\ 27 \\ \underline{24} \\ 3 \end{array}$$

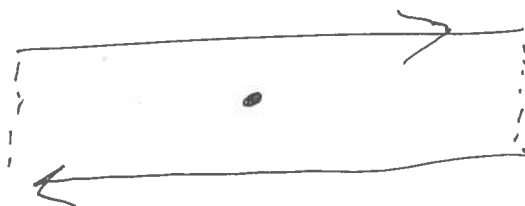
③ This is  $\frac{1}{8}$  of a cycle

$\int_a^b \vec{H} \cdot d\vec{\ell} = \frac{84}{8}$   
 $= \frac{21}{2} = 10.5 \text{ Amps}$



~~$\frac{84}{8} = 10.5$~~

④ This is  $\frac{1}{2}$  a cycle  
 b/c the part at  $\infty$  contributes nothing



$\int_a^b \vec{H} \cdot d\vec{\ell} = 40.5 \text{ amps}$