

8.5

Chapter 8 #5 & 6

$$\int_{\phi_1}^{\phi_2} a^2 \cos \phi \, d\phi \, d\lambda$$

$$\Delta \lambda a^2 (\sin \phi_2 - \sin \phi_1)$$

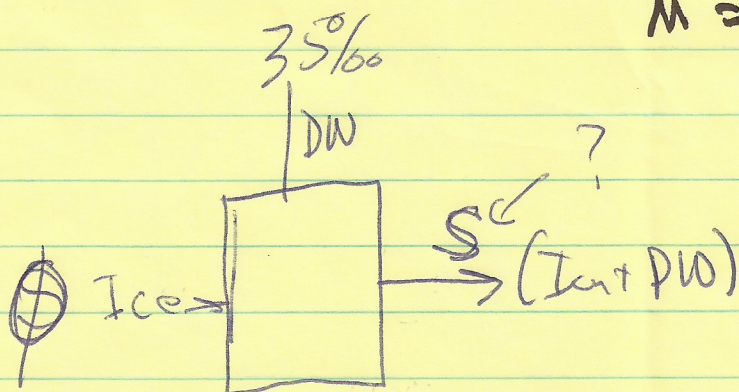
$$60^\circ \times \frac{2\pi}{360} = \pi/3$$

Make a "square" ice  
sheet 120W-60W  
45N-80N  
1500m deep

$$\frac{\pi}{3} \cdot a^2 \sin 80^\circ - \sin 45^\circ = 1.2 \times 10^{13} \text{ m}^3 \times 1500$$

$$\underline{1.8 \times 10^{19} \text{ kg}} \quad \underline{1.8 \times 10^{19} \text{ kg}}$$

$$\dot{M} = \frac{10^{19} \text{ kg}}{500 \cdot 365 \cdot 86400} = 6.3 \times 10^8 \text{ kg s}^{-1}$$



8.6

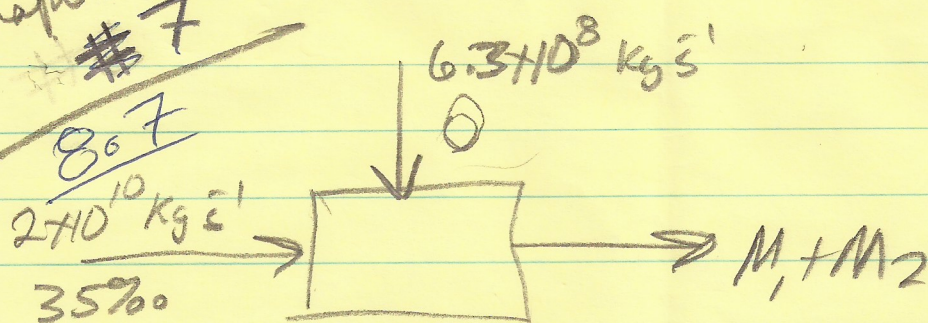
$$\frac{20 \times 10^{19} \text{ kg}}{500 \text{ years} \times 365 \frac{\text{day}}{\text{year}} \times 86400 \frac{\text{sec}}{\text{day}}} = 1.26 \times 10^9 \text{ kg s}^{-1} \sim 0.13 \text{ Sverdrup}$$

$\sim 10\%$  of Deepwater format

$$10^{19} \text{ kg } \oplus / 500 \text{ yr}$$

$$500 \times 365$$

$$182500$$



$$2 \times 10^{10} \text{ kg s}^{-1} \cdot 35\% + 6.3 \times 10^8 - 0 = 2.063 \times 10^{10} \text{ S}$$

$$S = \frac{2 \times 10^{10} \cdot 35}{2.063 \times 10^{10}}$$

$$= 33.9\%$$

Bonnie,

You need to check method.

Don't take off for small  
quantitative errors if method  
is OK.

—D