

Chap 7: HW

S 31
T -2°C

7.1 P_+ at surface ~ 24.5

S at surface $\sim 34 - 1.2 \sim 32.8$

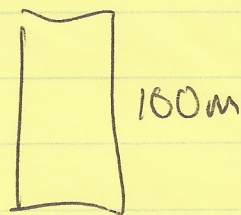
$T \sim -1.5$

From Fig 7.1

P_+ at depth is ~ 28.2

$T = -1.5, P_+ = 28.2 \rightarrow S \sim 35\%$
from Fig. 7.2

7.2 $32.8 \rightarrow 35\%$ Answer depends on what initial density is chosen.



$$32.8 \times 100m = 35\% \times X$$

$$\Rightarrow X = \frac{32.8}{35} \times 100$$

$$\approx 0.937 = 93.7m$$

$$\Rightarrow 100 - 93.7 = \underline{6.3 \text{ meters must freeze}}$$

OR: $30.5 \rightarrow 35\% \rightarrow 13 \text{ meters of ocean must freeze}$

$$32.8 X = 100 \cdot (35 - 32.8)$$

$$X = 100 \frac{2.2}{32.8} = 6.7m$$

7.3 Reversed Heat flux

7.4. Salty water to very cold place $\rightarrow$ dense

7.5 $P_+ = 22 \rightarrow P_+ = 28$ goes to bottom