2.84		## Developed the residence of the reside
2.8	.84 When the Tucurui dam was constructed in northern	
	Brazil, the lake that was created covered a large forest of valuble hardwood trees. It was found that even after 15 years un-	
derwater the trees were perfectly preserved and underwater log-		
ging was started. During the logging process a tree is selected, trimmed, and anchored with ropes to prevent it from shooting		
to the surface like a missile when cut. Assume that a typical		
	arge tree can be approximated as a truncated cone with a base liameter of 8 ft, a top diameter of 2 ft, and a height of 100 ft.	
1	Determine the resultant vertical force that the ropes must resist	
	when the completely submerged tree is cut. The specific grav- ty of the wood is approximately 0.6.	The Control of the co
	ty of the wood is approximately o.o.	
mandel vestigation and ratio of the property o	For equilibrium,	CN principles a monthly consumerable and a monthly districtly 1990 for monthly monthly on the principles of the constraint of the constrai
Argument and the second and the seco	$\sum F_{\text{vertical}} = 0$	
		1 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	so mat	
	$T = F_B - 2W \qquad (1)$	
	· I control in the control of the co	8
	For a truncated cone,	
	Volume = Th (r,2+r,r2+r22)	UT -
		~ weight
	r ₂ = top radius F _B	~ buoyant force
	h = height	~ tension in ropes
	Thus, $f'_{tree} = \frac{(71)(100 ft)}{3} \left[(4 ft)^2 + (4 ft \times 1 ft) + (4 ft \times 1 $	(1 ft)
	= 2200 ft ³	
Amendment of product and other control of the contr	For buoyant force,	
	- \ \ - \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(3)
	$F_{B} = J_{420} \times V_{tree} = (62.4 \frac{16}{613})(2200 \text{ fr})$	5/-131,000 16
	For weight,	
Law Allowing Commonweal and American Commonweal Commonweal Commonweal Commonweal Commonweal Commonweal Commonwe	0 1 V - (0/)(1211 1/2)	(-3) -87 (Local)
Account to the control of the contro	20 = 8 x + ree = (0.6)(62.4 1/3)1	2200TL) - 02, 40018
	From Eq.(1)	
	T = 137,000 6 - 82,400 6 = 54,60	00 16
Emmente et et et estate et en		