



$$I = \frac{bh^3}{12} = \frac{.305m(.032m)^3}{12} = 8.329 \times 10^{-7} m^4$$

ASSUME WEIGHT OF DIVING BOARD IS NEGLECTIBLE

$$y = \frac{P(2m - 0.7m)^2}{3EI} (2m) = \frac{981N(2m - 0.7m)^2}{3(10.3 \times 10^9 N/m)(8.329 \times 10^{-7} m^4)} (2m) = 0.1288m$$

THIS IS FROM THE TABLES IN ANY SOLIDS BOOK.

NOTE: FIGURE D-3, P1004, NORTON IS NOT CORRECT
IN MY COPY OF THE TEXT.

$$k = \frac{F}{d} = \frac{981N}{0.1288m} = 7,614 N/m \quad (\text{SPRING RATE})$$

$$f_n = \frac{1}{2\pi} \sqrt{\frac{kg}{w}} = \frac{1}{2\pi} \sqrt{\frac{7614N/m(9.81m/sec^2)}{981N}} = 1.39 Hz \quad (\text{EQN 13.11a})$$