

Problem number missing -1

0

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Incomplete identification -1

$l = 200 \text{ mm}$   $P = 100$   $\delta = 10$   $E = 130 \text{ GPa}$ ,  $d = ?$

Incomplete problem statement -1

$$\delta = \frac{100 (.2)^3 \cdot 64}{3 (130 \times 10^9)^3 \cdot 10^{14} \pi d^4} = .01$$

No clear beginning of solution -1

$$\frac{4.18 \times 10^{-11}}{d^4} = .01$$

Precede decimal point with a digit 0

$$d^4 = 4.18 \times 10^{-9}$$

$$d = 8.04015 \times 10^{-3} \text{ m}$$

Convert powers of 10 to  $\mu$ , m, k, M, G, ... if SI units used

Too accurate -1

~~$$\delta = \frac{PL^3}{AE}$$
  
$$= \frac{100 (.2)^3}{A (130 \times 10^9)}$$
  
$$A = ?$$~~

Messy or irrelevant work -1

No explanation of work -2

Final answer? -1

No explanatory figure(s) -2

$$I = \frac{\pi}{64} d^4$$

Illogical development -1

Symbolic solution missing -2

$$\delta = \frac{PL^3}{3EI}$$

Discussion? -1

Note: correct answer, but no credit!