

Answer on question #74689

$$2B = 12.604 \text{ m}^{-1}$$

$$B = \frac{12.604}{2} = 6.302 \text{ m}^{-1}$$

$$B = \frac{h}{8\pi^2 I C}$$

$I = \text{moment of Inertia}$

$$I = \frac{h}{8\pi^2 B C}$$

$$I = \frac{6.626 \times 10^{-34} \text{ Kg m}^2 \text{ s}^{-1}}{8 \times (3.14)^2 \times 6.302 \times 2.998 \times 10^8 \text{ m s}^{-1}}$$

$I (\text{moment of Inertia}) = 4.44 \times 10^{-45} \text{ Kg m}^2$

$$I = \mu \pi^2$$

$$\mu = \sqrt{I/\pi^2} = \sqrt{\frac{4.44 \times 10^{-45}}{.99845}}$$

$\mu = 6.67 \times 10^{-23} \text{ m}$

$$\mu = \frac{m_A m_H}{m_A + m_H} = \frac{27 \times 24 \times 1}{27 + 24 + 1}$$

$$\mu = .99845$$

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