3.-1 Setting x and y to 0 gives that

$$\vec{B}(\vec{r}) = \frac{\mu_0 IR}{4\pi} \int_0^{2\pi} \frac{z\cos\phi\hat{x} + z\sin\phi\hat{y} + R\hat{z}}{\left(R^2\cos^2\phi + R^2\sin^2\phi + z^2\right)^{3/2}} d\phi$$

However, because $\int_0^{2\pi} \cos\theta d\theta = 0$ (and similarly for sin),

$$\vec{B}(\vec{r}) = \frac{\mu_0 IR}{4\pi} \int_0^{2\pi} \frac{R\hat{z}}{(R^2+z^2)^{3/2}} d\phi = \frac{\mu_0 IR}{4\pi} \frac{2\pi R}{(R^2+z^2)^{3/2}} = \frac{\mu_0 IR^2}{2(R^2+z^2)^{3/2}}$$

3.0 1.23 states

$$I \approx \sum_{j=0}^{n-1} \frac{1}{2}(F_j + F_{j+1})\Delta x \equiv I_t$$

and 1.19 states that

$$I \approx \sum_{j=0}^{n-1} F_j \Delta x \equiv I_b$$

We can see that the first term of the trapezoidal approximation is

$$I_{t,1} = \frac{1}{2}(F_1 + F_2)\Delta_x$$

and the second is

$$I_{t,2} = \frac{1}{2}(F_2 + F_3)\Delta_x$$

with their sum being

$$I_{t,1+2} = \frac{1}{2}F_1 + F_2 + \frac{1}{2}F_3$$

It follows that

$$I_t = I_b - \frac{1}{2}F_1 + \frac{1}{2}F_n$$