^{2}, between $z = 1$, $x = 4$ The r.m.s. value is:

$$\sqrt{\frac{1}{4-1} \int_1^4 y^2 \mathrm{d}x} = \sqrt{\frac{1}{3} \int_1^4 (2x^2)^2 \mathrm{d}x} = \sqrt{\frac{1}{3} \int_1^4 4x^4 \mathrm{d}x} = \sqrt{\frac{4}{3} \left[\frac{x^5}{5}\right]_1^4} = \sqrt{\frac{4}{15}(1024 - 1)} = \sqrt{272.8} = 16.5 \quad (2)$$

$_m atlabCode.pngRMS$