Matthew Engel
CHE 528
TEST 2

1(b)

$$
\begin{aligned}
B(x) &= \frac{2\pi}{3}\, d^3 \\
&= \frac{2\pi}{3}\left[x^2 d_1^3 + (1-x)^2 d_2^3 + 2x(1-x)(\frac{d_1+d_2}{2})^3\right] \\
\frac{B(x)}{\frac{2\pi d_1^3}{3}} &= x^2 + (1-x)^2\left(\frac{d_2}{d_1}\right)^3 + 2x(1-x)\left(\frac{d_1+d_2/2}{d_1}\right)
\end{aligned}
$$