Prob. 3.14

Define parameters:

> `Digits:=4;b[0]:=.5;d[0]:=100;d[f]:=500;`

Extension ratio:

> `lambda:=d[f]/d[0];`

$$\lambda := 5$$

Final thickness:

> `b[f]:=b[0]/lambda^2;`

$$b_f := .02000$$

Define shear modulus, compute true stress:

> `G:=1e6;sigma[t]:=2*G*(lambda^2 - 1/lambda^4);`

$$G := .1\ 10^7$$

$$\sigma_t := .5000\ 10^8$$

Compute final radius (mm) and internal pressure:

> `r[f]:=d[f]/2;p:=sigma[t]*(2*b[f])/r[f];`

$$r_f := 250$$

$$p := 8000.$$

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