Сопромат, номер 3 в Matlab.

```matlab
R1=0.18;
R2=0.21; % м
p1=7*10^6; % Па
p2=2*10^6;
T1=170; % celcius
T2=130;
deltaT=T1-T2;
E=200*10^9; % Па
alpha=1.25*10^(-5);  % inv celcius
PoissonCoeff=0.3;
sigmaflow=280 * 10^6; % предел текучести
K=E*alpha*deltaT./(2*(1-PoissonCoeff)*log(R2/R1));
r=linspace(R1,R2,250);


sigma_r_p=(p1.*R1.^2 - p2.*R2.^2)./(R2.^2 - R1.^2) - (p1-p2).*((R1.*R2).^2)./((R2.^2 - R1.^2).*r.^2);
sigma_theta_p=(p1.*R1.^2 - p2.*R2.^2)./(R2.^2 - R1.^2) + (p1-p2).*((R1.*R2).^2)./((R2.^2 - R1.^2).*r.^2);
sigma_z_p=(p1.*R1.^2 - p2.*R2.^2)./(R2.^2 - R1.^2)+ 0*r;  % необходимый костыль матлаба
K=E*alpha*deltaT./(2*(1-PoissonCoeff)*log(R2/R1));


sigma_r_t=-K*(log(R2./r)+ (R1.^2)*(1-(R2.^2)./(r.^2))*log(R2./R1)/(R2.^2 - R1.^2));
sigma_theta_t=K*(1-log(R2./r) - (R1.^2)*(1+(R2.^2)./(r.^2))*log(R2./R1)/(R2.^2 - R1.^2));
sigma_z_t=K*(1-2*log(R2./r) - 2*(R1.^2)*log(R2./R1)/(R2.^2 - R1.^2));


tiledlayout(2,2)
nexttile


%plot(r,sigma_r_p)
%plot(r,sigma_r_t)
plot(r,sigma_r_p + sigma_r_t)


grid on
grid minor
```