

(Debug) In[52]:= (\* Equação Universal - Cálculo do fluxo \*)

(Debug) In[246]:= comprimentoAspersor = 2;  
dimetroAspersor = .0234;  
comprimentoTubalacao = 200;  
dimetroRecalque = .075;  
hgs = 10;  
hgsrecalque = 24;  
hgaspersor = 2;  
hfsuccao = 1;  
hfaspersor = 1;  
cargaDePressao = 40;  
f = .9;  
$$\text{vazao} = \text{Solve}\left[1 = .08263 f q^2 \frac{\text{comprimentoAspersor}}{\text{dimetroAspersor}^5}, q\right];$$
$$\text{hf} = \frac{10.65 \text{ vazao}[[2, 1, 2]]^{1.852} \text{comprimentoTubalacao}}{150^{1.852} \text{dimetroRecalque}^{4.871}};$$
$$\text{hmt} = (-\text{hgs} + \text{hfsuccao}) + (-\text{hgsrecalque} + \text{hf}) + (\text{hgaspersor} + \text{hfaspersor}) + \text{cargaDePressao}$$

(Debug) Out[259]=  
10.0099

(Debug) In[60]:=

(Debug) In[61]:=

(Debug) In[62]:=

(Debug) Out[63]=  $10 + 6.92824 \times 10^{-7} \text{comprimentoTubulacao}$