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(Debug) In[1]:= comprimento = 753;
desnivelGeo = 32.5;
 $\eta$ [vazao_] := -.0039 vazao2 + .985 vazao + 4.37;
hmt[vazao_] := -.0011 vazao2 + .044 vazao + 58.39;
q = Solve[D[ $\eta$ [vazao], vazao] == 0, vazao];
hmtx = hmt[q[[1, 1, 2]]];
hf[vazao_] := 
$$\frac{10.65 (vazao / 1000)^{1.852} \text{comprimento}}{130^{1.852} d^{4.871}}$$

a = Solve[hmtx == 32.5 + hf[q[[1, 1, 2]]], d];
a[[1, 1, 2]] 1000

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(Debug) Out[9]= 263.877

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