Law of Squares - Flow & Pressure Differential Determination

REFERENCES: MARKS' MECHANICAL ENGINEERS HANDBOOK

NOTE: Always begin a new case by retrieving the original file. Direct entry of data in cells that originally contain table lookups could cause functions to be lost, or incorrect calculations. I format cells requiring entry colored **RED**; calculated values are black.

1.) Enter the service at [C4].

flow:

2.) Enter the known value of flow (W1) at [C9].
3.) Enter the known value of pressure (P1) at [C10].
4.) Enter the known value of pressure (P2) at [C11].
5.) The calculated value of flow (W2) is shown at [G11].

pressure:

6.) Enter the known value of flow (W1) at [C19].
7.) Enter the known value of flow (W2) at [C20].
8.) Enter the known value of pressure (P1) at [C21].
9.) The calculated value of pressure (P2) is shown at [G21].

Print out using direct EXCEL commands.

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Determine: HAZ #7; Flow thru 1-1/2" HH-SS-30 SPRAYING SYSTEMS NOZZLES

Flow:

known			calculated
W_1 =	102	rate	$W_2 = (P_2 / P_1)^{0.5} * W_1$
P_1 =	100	pressure	
P_2 =	140	pressure	W_2 = 120.68803 rate

Pressure:

known			calculated
W_1 =	102	rate	$P_2 = (W_2 / W_1)^{2} * P_1$
W_2 =	120.7	rate	
P_1 =	100	pressure	P_2 = 140.02778 pressure units