

CM3215 #2  
LABORATORY  
DR. FAITH MORRISON  
2009-

Composition Book



12 April 2011

## DP meter calibration $\Delta P$ (psi) vs I (mA)

LAB STATION		Initials
1	$.2183 (mA) - .8414 = \Delta P (psi)$	PS
2	$P (psi) = 0.2472 * I (mA) - 1.1605$	EL SR
3	$DP (psi) = 0.2269 * (I)_{mA} - 0.9407$	MRJ
4	$P (psi) = 0.241 * I (mA) - 1.125$	RM
5	$\Delta P = 0.2391 (I) - 0.7925$	JR
6	$P (psi) = 0.2311 (I (mA)) + 0.2188$	KJ
7	$.21831 (mA) - .8414 = P (psi)$	EB

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Lab Station	Rotameter Q (gpm) as a function of R (%)	Initials
1	$Q(\text{gpm}) = 0.0514(R) - 0.1277$	PS
2	$Q(\text{gpm}) = 0.0497 * R(\%) - 0.0764$	SP
3	$Q(\text{gpm}) = 0.0501 * (\%R) - 0.1305$	MRJ
4	<del><math>Q(\text{gpm}) = -0.0388 * P^2(\text{psi}) + 0.5988 * P(\text{psi})</math></del> $Q = 0.0463 * R(\%) + 0.118$	RM AU <small>← orifice meter</small>
5	$Q(\text{gpm}) = 0.0503 (\% \text{ Rotameter}) - 0.1200$	JR
6	$Q(\text{gpm}) = .0502(\%R) - .1115$	AB
7	$Q(\text{gpm}) = .0514(\%R) - .1227$	EB

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Lab Station	Orifice meter $Q$ (gpm) as a function of $I$ (mA)	Initials
1	$Q(\text{gpm}) = -0.0257 (\text{psi})^2 + .5409 \text{psi} + 7552$	KB
2	$Q(\text{gpm}) = -0.0619 * (P(\text{psi}))^2 + 0.72 * P(\text{psi}) + 0.6748$	EL SP
3	$Q(\text{gpm}) = -0.127 * (\text{psi})^2 + 1.053 * (\text{psi}) + 0.4067$	MRS
4	<del><math>Q(\text{gpm}) = 0.0463 * R(\text{V}) + 0.118</math></del> ← This was rotameter $Q(\text{gpm}) = -0.0388 P^2(\text{psi}) + 0.5988 P(\text{psi}) + 0.7394$	RM AM
5	$Q(\text{gpm}) = 0.4852 (\Delta P(\text{psi})) + 0.6776$	JR
6	$Q(\text{gpm}) = .5351 I(\text{mA}) + .7342$	AB
7	$Q(\text{gpm}) = .540 \Delta P + .806$	EB

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Lab Station	Pumping Head (ft) as a function of Q (gpm)	Initials
1	$H(ft) = -1.8589(Q(gpm))^2 - 0.02053Q(gpm) + 77.466$	KJ
2	$H(ft) = -2.9299 * (Q(gpm))^2 - 1.399 * Q(gpm) + 73.828$	EL RT
3	$H(ft) = -2.2825 * (Q(gpm))^2 + 0.5637 * Q(gpm) + 80.796$	MRJ SP
4		
5	$H(ft) = -2.023 * Q^2(gpm) + 0.4937 * Q(gpm) + 71.629$	RM
6		
7	$H(ft) = -2.5099(Q, gpm) + .4956(Q, gpm) + 75.573$	EB