## Welcome to IB Physics II

Water flows at 2.00 m/s at ground level with a pressure of  $1.15 \times 10^5$  Pa through a 10.0 cm diameter pipe. What is the pressure if it is at an elevation of 3.50 m going through a 6.00 cm diameter pipe? (Find the second speed first.  $\rho = 1000$ . kg m<sup>-3</sup>)

v =  $(10/6)^2(2.00 \text{ m/s}) = 5.55555 \text{ m/s}$ P +  $\frac{1}{2}\rho v^2 = P + \rho gh + \frac{1}{2}\rho v^2$ 1.15E5 +  $.5(1000)(2.00)^2 = P + (1000)9.81(3.50) + .5(1000)(5.5555)^2$ P = 67,232.9 Pa  $\approx 6.72E4$  Pa Each grid is a meter. If charge A is -14.7  $\mu$ C, and charge B is +17.2  $\mu$ C, calculate the electric field at the origin:



	mag	angle	X	у
A	7773.7	165.96	-7541.6	1885.4
В	19328.5	45	13667.3	13667.3
	Sunday 1		6125.7	15552.7

Mag 16,715 N/C angle 68.5° (trig angle)























## **IB** Physics Thermodynamics •Electricity •Currents and circuits •Magnetism •Atomic and Nuclear •Review •IB Test •Special Relativity



## **Research Project:**

- •Not just another lab
- Look for real unknown
- •Doesn't need to be really complicated
- •Web page has examples

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## All of this is on the handout