Section 3.5 Pascal’s Law (pages 56-60 in textbook)

Pressure:

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Pascal (Pa):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Pascal’s formula (hint there are two formulas you need to write here):

Soooo, now you need to write down the formula for pressure:

**FYI: Scientists measure in kilopascals because 1Pa is a very small amount of pressure. It’s about the same amount of pressure exerted on your desk by a small sheet of paper lying on it. Pressure can also be measured using newtons (N).**

Pressure and Depth:

-Pressure of water is \_\_\_\_\_\_\_\_\_\_ at the same depth of water.

-The greater the depth of water, the \_\_\_\_\_\_\_\_ the pressure.

Define Pascal’s law:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explain how Hydraulic Devices work in your own words:

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(Please make sure to fully answer this so you understand the concept!! One or two sentences are not sufficient!)

Explain how Pneumatic Devices work in your own words:

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Finally, in order for these systems to function they need to maintain pressure….why?

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Bonus Questions:

1. A hydraulic lift has 1000 N applied to an input piston that has an area of 30cm².
2. What is the pressure exerted on the liquid by the input piston?
3. If the force was doubled, what would be the pressure?
4. If the area were reduced to 15cm², what would be the pressure?
5. If 10 N of force is applied to an area of 1m², what is the pressure?