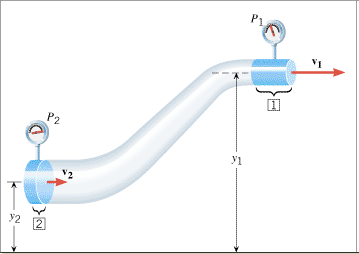
PHYS 201 Bernoulli’s Principle Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. Define pressure.

2. Describe each of the terms in the Bernoulli’s equation below.



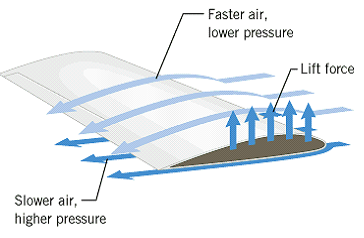
*P =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ρ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*v =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

3. What is the unit for the term *ρgy*in the Bernoulli’s equation?

4. (P63) An airplane wing is designed so that the speed of the air across the top of the wing is 251 m/s when the speed of the air below the wing is 225 m/s. The density of the air is 1.29 kg/m3. What is the lifting force on a wing of area 24.0 m2?



5. (P72) An airplane has an effective wing surface area of 16  m squared that is generating the lift force. In level flight the air speed over the top of the wings is 62.0  m divided by s, while the air speed beneath the wings is 54.0  m divided by s. What is the weight of the plane?

6. During a hurricane wind is blowing at 115 MPH over a roof of a house of area 175 m2. Calculate the upward force acting on the roof. If you need help, watch the following video: (<https://www.youtube.com/watch?v=cUMspps8d8A>)