13.6: General Questions

1. Explain what the units of atmospheric pressure lbs/in2 mean in terms of the “weight” of air on you.
2. Is there a difference in the amount of force exerted by you when you take a step and your full weight is on one foot as compared to when you stand and your full weight is on both feet? Explain.
3. If you or someone you know wears high-heeled shoes, placing most of the weight on the balls of the feet, does this affect the amount of force on the person’s feet as compared to wearing flat shoes? Does this affect the amount of pressure on the person’s feet as compared to wearing flat shoes? Explain.
4. When a ballerina goes up on point, the part of the Pointe shoe that touches the floor is about 2 inches by 1 inch. If a 110 lb ballerina has all of her weight on the toes in one Pointe shoe as she pirouettes, and there is only 33% area of contact between the toes and the Pointe shoe box, how much pressure is on the ballerina’s toes?

Contributors and Attributions

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