

Chapter 7 Assignment 6

1. A person with a momentum of 2000 kg m/s comes to a stop in 10.0 s . What is the average net force on this person during the stopping?
2. A person with a momentum of $2000 \text{ N}\cdot\text{s}$ comes to a stop in 0.2 s . What is the average net force on this person during the stopping?
3. A pitcher throws a baseball ($m = 146 \text{ g}$). The ball starts from rest and reaches a speed of 40 m/s in 0.3 s as he goes through his throwing motion. What is the average force that he exerts on the baseball in order to do this?
4. A catcher catches a baseball ($m = 146 \text{ g}$). The ball arrives with a speed of 40 m/s and comes to rest in 0.03 s as it is caught. What is the average force that the catcher's mitt exerts on the baseball in order to do this?
5. A batter hits a baseball ($m = 146 \text{ g}$). The ball is moving directly toward the catcher at 40 m/s . The bat is in contact with the ball for 0.0007 s . The baseball leaves the bat moving away from the catcher at 45 m/s . What is the average net force on the ball during its contact with the bat?