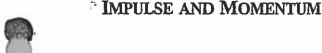
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1. A 60-g golf ball leaves the face of a golf club with a velocity of 75 m/s. If the club exerted an average force of  $3.0 \times 10^4$  N, what was the time of impact between the club and the ball?

t =

- -2. A-900 N running back moving at 2.0 m/s is stopped in 0.70 seconds when hit by a linebacker.
  - a. What average force did the linebacker exert on the running back?

F =

b. How much did the running back's momentum change?

 $\Delta p =$ 

- 3. Twin girls, each weighing 500 N, are riding in a car traveling at 20.0 m/s. One girl is wearing a seat belt while the other is not. The car is involved in an accident and the girl wearing the seat belt is brought to a stop in 0.120 seconds. Unfortunately, the dashboard brings the second girl to a stop in only 0.00800 seconds.
  - a. What is the impulse exerted on each girl?

e a laterative and a lateral lateral distribution of

 $\Delta p =$ 

b. What is the force exerted on each girl?

F =

- 4. The engines of a 1.20 × 10<sup>5</sup> N tocket exert an upward thrust of 2.00 × 10<sup>5</sup> N for 1.50 minutes upon lift-off.
  - a. What is the impulse exerted on the rocket?

 $\Delta p =$ 

b. What is the velocity of the rocket at the end of the 1.50-minute period?

 $v_f =$ 

