

# Change in Momentum and Impulse

## Independent Practice

Due: \_\_\_\_\_

### Change in momentum

1. What is the change in momentum of a 3 kg object accelerating from rest to 12 m/s?
2. What is the change in momentum of a 4 kg object accelerating from 10 m/s to 12 m/s?
3. What is the change in momentum of a 13 kg object accelerating from 20 m/s to 12 m/s?
4. What is the change in momentum of a 33 kg object accelerating from 30 m/s to 12 m/s?
5. What is the change in momentum of a 3 kg object accelerating from 12 m/s to rest?

### Impulse

1. What is the impulse of a 3 kg object accelerating from rest to 12 m/s?
2. What is the impulse of a 4 kg object accelerating from 10 m/s to 12 m/s?
3. What is the impulse of a 13 kg object accelerating from 20 m/s to 12 m/s?
4. What is the impulse of a 33 kg object accelerating from 30 m/s to 12 m/s?
5. What is the impulse of a 3 kg object accelerating from 12 m/s to rest?
6. How much force is exerted on a 3 kg object accelerating from rest to 12 m/s in 1.5 seconds?

# Change in Momentum and Impulse Independent Practice

Due: \_\_\_\_\_

7. How much force is exerted on a 4 kg object accelerating from 10 m/s to 12 m/s in 2.5 seconds?
8. How much force is exerted on a 13 kg object accelerating from 20 m/s to 12 m/s in 3.5 seconds?
9. How much force is exerted on a 33 kg object accelerating from 30 m/s to 12 m/s in 4.5 seconds?
10. How much force is exerted on a 3 kg object accelerating from 12 m/s to rest in 5.5 seconds?
11. How much time is needed to accelerate a 3 kg object from rest to 12 m/s if a force of 2.5-N is applied?
12. How much time is needed to accelerate a 4 kg object from 10 m/s to 12 m/s if a force of 2.5-N is applied?
13. How much time is needed to accelerate a 13 kg object from 20 m/s to 12 m/s if a force of -2.5-N is applied?
14. How much time is needed to accelerate a 33 kg object from 30 m/s to 12 m/s if a force of -2.5-N is applied?
15. How much time is needed to accelerate a 3 kg object from 12 m/s to rest if a force of -2.5-N is applied?