**Unit 3 Worksheet 4: Free Fall Practice**

**Problem Solving**

1. A rock dropped off a cliff is observed to splash into the ravine below 4 seconds after it is released, how tall is the cliff?

1. If the rock above were thrown down at 10 m/s, how long would it take the rock to splash into the water below?

1. A ball is thrown straight up at 45 m/s.
2. How high does it reach?
3. How long does it take to return to its original height?

1. How fast is it moving as it reaches that height?
2. How would the answers to these questions change if these events were to take place on a different planet, specifically Mars (where the freefall acceleration value is ~ 4 m/s/s)?