Physics 20 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.11-1.12 Projectile Motion Practice

1. A ball is kicked off the top of a building at a horizontal velocity of 20.0 m/s. It lands on the ground 4.20 s later; how far from the base of the building does the ball land? [84.0 m]
2. Terry kicked a soccer ball horizontally with a velocity of 18.0 m/s from the top of a cliff. The ball hit the ground 100.0 m from the base of the cliff. How high is the cliff? [151 m]
3. A canon ball is shot horizontally off a fort with a velocity of 25.0 m/s. The fort is 150 m high, where will the canon ball hit the ground? [138 m]
4. An object is thrown horizontally off an 85.0 m building. If the object hits 67.8 m from the base of the building, what was the horizontal velocity of the object? [16.3 m/s]
5. Graeme kicks a football into the air from the ground at an angle of 40° from the horizontal at a velocity of 18.0 m/s. How far will the football travel horizontally? [32.5 m]
6. A canon ball was shot out of a canon at Travis. The canon was angled at 35° to the horizontal. The canon ball was in the air for 9.26 s. At what initial velocity was the cannonball shot? [79.2 m/s]
7. Brandon kicks his physics book in the air at a velocity of 12.5 m/s. It lands 6.5 m down the hallway 1.25 s later. What angle did he kick the ball at? []
8. An arrow is shot 25.6 m/s from the top of a 123 m high cliff at an angle of 38°. How far will the arrow land from the base of the cliff? [203 m]