**Light** **Gravity**

Distance (m) Intensity (lumens) Distance(re) Force (Ibs)

.5 400 1.0 150

1.0 100 1.25 96

1.5 44 1.5 67

1.7 35 2.0 37.5

2.0 25 2.5 24

2.5 16 3.0 17

3.0 11 3.5 12

3.5 8 4.0 9

4.0 6 4.5 7

**Sound**  **Electrical Force**

Distance (m) Intensity (W/m2) Distance (m) Force (N)

.5 16,000 .125 64

1.0 4,000 .25 16

1.5 1,780 .50 4

2.0 1000 .75 1.8

2.5 640 1.0 1

3.0 445 1.5 .4

3.5 327 2.0 .25

4.0 250

Force and Acceleration (3 kg) Distance (constant velocity)

Force (N) Acceleration (m/sec2) Time Distance

1 N .33 1.0 sec 6 m

2 N .67 2.0 sec 12 m

3 N 1.0 3.0 sec 18 m

4 N 1.33 4.0 sec 24 m

5 N 1.67 5.0 sec 30 m

6 N 2.0 6.0 sec 36 m

Distance (acceleration) Kinetic Energy

Time Distance Velocity Kinetic Energy

1.0 sec 1.5 m 1.0 m/sec 2.0 J

1.5 sec 3.4 m 1.5 m/sec 4.5 J

2.0 sec 6 m 2.0 m/sec 8.0 J

2.5 sec 9.4 m 2.5 m/sec 12.5 J

3.0 sec 13.5 m 3.0 m/sec 18 J

3.5 sec 18.4 m 3.5 m/sec 24.5 J

4.0 sec 24 m 4.0 m/sec 32 J

**Light** **Gravity**

Distance (m) Intensity (lumens) Distance(re) Force (Ibs)

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1.0 100 1.25 96

1.5 44 1.5 67

1.7 35 2.0 37.5

2.0 25 2.5 24

2.5 16 3.0 17

3.0 11 3.5 12

3.5 8 4.0 9

4.0 6 4.5 7

**Sound**  **Electrical Force**

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3.0 445 1.5 .4

3.5 327 2.0 .25

4.0 250