**Physics 1st Tri Exam Review (2012/13)**

**Forces**

1. What is a vector quantity and name some examples?
2. What is a scalar quantity and name some examples?
3. How do you find the minimum resultant of a pair of parallel forces?
4. How do you find the net force when 2 forces act in opposite directions
5. How do you find the maximum resultant of a pair of parallel forces?
6. How do you find the net force when 2 forces act in the same direction?
7. What is the definition of equilibrium?
8. How do you calculate the tension in a rope or ropes when an object with a certain weight is hanging from it?
9. How is a vector drawn for a person’s weight?
10. What is special about the tension in a pair of ropes that is 120 degrees apart from one another?
11. How do you find the components of a vector?
12. What is the parallelogram rule and how do you construct one?
13. What is static equilibrium?
14. What is dynamic equilibrium?
15. What is the definition of friction and in which direction does it act?

**Newton’s 1st law**

1. What is another name for Newton’s 1st law?
2. What are some of Copernicus’s contributions to physics?
3. What are some of Galileo’s contributions to physics?
4. What are some of Aristotle’s contributions to physics?
5. How does doubling the mass affect the inertia?
6. How does weight change as you move from the Earth to the Moon?
7. How does mass change as you move from the Earth to the Moon?
8. How much force is needed to keep an object moving?
9. How do you convert from kg to Newtons?
10. How do you convert form Newtons to kg?

**Linear Motion**

1. What is the definition of speed?
2. What are the possible units of speed?
3. What is the difference between average speed and instantaneous speed?
4. What is the definition acceleration?
5. What is needed to happen to an object for it to be considered accelerating?
6. It doesn’t matter if something is dropped, thrown, shot out, or jumping, everything will accelerate at what rate?

**Projectile Motion**

1. What does an object have to be doing to be considered a projectile?
2. What is the biggest difference between the vertical and horizontal components of a projectile?
3. What are the different angles that a projectile can be launched at and still hit the same target on the ground?
4. Is gravity responsible for slowing down a projectile fired horizontally? If not, what is responsible for it?
5. How do you find the resultant of a pair of vectors at right angles to each other?

Falling objects

1. What stays constant as an object falls?
2. What increases as an object falls?
3. How do you determine the distance and object falls?
4. What letter symbolizes the acceleration due to gravity?
5. What is the numerical value given to gravity?
6. What is the rate of acceleration due to gravity on an object that is dropped from rest?
7. What is the rate of acceleration due to gravity on an object that is shot out horizontally?
8. What is the rate of acceleration due to gravity on an object that is shot out at an upward angle?
9. What is the rate of acceleration due to gravity on an object that is shot out at a downward angle?
10. In what direction does gravity always act?
11. The speed of a falling object will increase by how much each second?

Hang time

1. How do you calculate the vertical height of a person with a certain hang time?
2. What is the hang time for most athletes?

**Newton’s 2nd Law**

1. What causes and acceleration and how is it proportional to acceleration?
2. How do you calculate acceleration using Newton’s 2nd law?
3. How do you calculate the mass of an object using Newton’s 2nd law?
4. How do you calculate the force of an object using Newton’s 2nd law?

Terminal Velocity

1. What is the acceleration of an object once it hits it’s terminal velocity?
2. What are the terminal speeds for an average person parachuting before and after the shoot is open?

Pressure

1. What is the definition and what unit is it measured in?

**Graphing**

Match the letter and the description that goes with it to the correct graph.

1. Stopped
2. Constant Velocity toward the origin
3. Speeding up
4. Slowing down
5. Constant Velocity away from the origin







Match the letter and the description that goes with it to the correct graph.

1. Negative acceleration
2. Constant - acceleration
3. Constant + acceleration
4. Constant non zero velocity
5. Positive acceleration









**According to the graph above,**

1. How far did the two runners start apart from one another ?
2. Are they going at the same velocity or a different velocity ?
3. How can you tell ?