Ty Marking

Mr. Risse

Period 4

20 October, 2017

Discussion questions

4.22 Cars are designed to crumple in the front and the back to increase the time of the crash therefore decreasing the acceleration the passengers experience. This is not this way from the side because if the side crumpled the occupants would be directly hit.

4.24 If a string can barely sustain enough tensile force to counteract the weight of the object and slowly lift it, jerking the string upwards would cause a large upwards tensile force that is greater than the string could handle.

4.25 Neither, if there is no change in speed than it has a 0 net force, the same as when it was at rest meaning the tensile forces are equal. Speeding up because when it is speeding up the upwards force – the tensile force – is greater than the weight whereas when it is slowing down it is less.

4.26 A 20kg stone because the pull is a force and the force of weight is proportional to mass. The 20kg stone does not fall faster because while it has twice the downwards force it has twice the inertia.

4.28 The horse also pushes back on the ground causing the hors to move forward.

4.31 When a car comes to a stop friction on the brake pads is the force that causes it to stop. When it increases its speed, it is due to the spinning wheels pushing on the ground below them.

4.35 Yes, it is correct. Only accounting for vertical motion, when the plane is moving up the upwards force must be greater than the weight causing the Net force to be up. When it is going down the upwards force must be less than the downwards force and when it is still they are equal causing a net force of 0.

4.40 The 1000kg car experiences the most force more mass with more inertia is hitting it. The smaller car experiences more acceleration than the bigger car because it has less inertia meaning changes its velocity faster with the same amount of force and it is experiences more force. This larger acceleration is what causes the passengers to be more harmed.