Newton's Second Law of Motion Questions

Newton's second law of motion states that acceleration is produced when a force acts on a mass. The greater the mass of the object to be accelerated the greater the amount of force needed to accelerate the object. Each of the following situations demonstrates Newton's second law. Describe how the difference in mass will affect the force needed to change the acceleration. Please write in complete sentences.

1. Amy weighs 78 pounds and her dad weighs 187 pounds. They are roller skating. Amy challenges her dad to a race. They are equally strong. They stand poised at a starting line. Explain who will win? Amy’s dad will win because Amy weighs 78 pounds and her dad weighs 187 pounds. Amy’s dad will win also because in Newton's second law it states that acceleration is produced when a force acts on a mass. The greater the mass of the object to be accelerated the greater the amount of force needed to accelerate the object. Her dad will win.
2. Tony and Jose play on the football team. Tony weighs more than Jose. During practice, Tony and Jose practice blocking on a tackle mannequin. Both boys start from the same place and position. Each tackle mannequin has the same mass. At the same speed, the boys run forward into the mannequin. What is their impact on the mannequin? Tony would rock the dummy more because he has more force going forward than Jose.
3. Two vehicles are broken down on the side of the road. One is a small sports car. The other is a delivery truck. The drivers need to push the vehicles forward and onto the shoulder of the road. Both drivers can push with the same amount of force. Who will get their car off the road first. The delivery truck because it is heavier, it weighs more mass, and the small sports car is not that strong so it will be knocked off the road easily.