Force Practice Problems

$$F = m \times a \qquad a = F/m \qquad m = F/a$$

1. A 48 kg skater pushes himself at an acceleration of 3 m/s². What is the force he is pushing himself with?

2. A girl pulls a 30 kg wagon at an acceleration of 3.5 m/s². What force is she pulling the wagon with?

3. A 60 kg water-skier is pulled by a boat, which causes him to accelerate at 2.4 m/s². What is the force that causes this acceleration?

4. A horse pulls a 560 kg cart, accelerating it at 4.2 m/s². What is the force on the cart created by the horse?

5. A man pushes a 102 kg table across the room, accelerating it at 0.8 m/s². What is the force being applied by the man?

6. What is the net force on a 1,200 kg elevator accelerating at 2 m/s²?

7. What is the mass of a woman on roller blades, if she uses a force of 270 N to accelerate herself to a rate of 2.5 m/s²?

8. What is the acceleration of a 100 kg cheetah that pushes itself with a force of 750 N?

9. What is the mass of a dog that uses a force of 220 N to accelerate itself to a rate of 4.4 m/s²?

10. What is the acceleration of a 300 g baseball with a force of 900 N?