

Name _____ Date _____ Per _____

F = MA Practice

Also: **m = F/a** and **a = F/m**

1. How much force is required to accelerate a 50 kg mass at 4 m/s^2 ?
2. What is the acceleration of a 7 kg mass being pulled by a 56 N force?
3. Given a force of 75 N and an acceleration of 3 m/s^2 , what is the mass?
4. What is the acceleration of a 7 kg mass pushed by a 3.5 N force?
5. Given a force of 100 N and an acceleration of 5 m/s^2 , what is the mass?
6. What is the acceleration of a 24 kg mass pushed by an 8 N force?
7. How much force is required to accelerate a 50 kg mass at 2 m/s^2 ?
8. What is the mass of a block accelerating at 2 m/s^2 and pushed by a 9 N force?
9. A 10 N force is applied to a 2 kg mass. How fast will it be going in 10 sec?
10. A 64 N force is applied to an 8 kg mass. How fast will it be going in 5 sec?
11. What force is necessary to accelerate a 5 kg mass to 10 m/s in 5 sec?

12. Joe has a mass of 70 kg. What is his weight? (Hint: $F = MA$, weight is the force, and acceleration is gravity [9.8 m/s^2])

13. On the surface of the earth how much does a 10 kg mass weigh?

14. On the surface of the earth a box weighs 49 N. What is its mass?

15. The acceleration due to gravity on the moon is 1.6 m/s^2 . What does a 10 kg mass weigh on the moon?

16. On the moon, Bob weighs 160 N. On earth, Fred weighs 882 N. Who has the greater mass? (Hint: 2 part problem)

17. A 4 kg mass sits on a table that has 5 N of friction. If Maria applies a 25 N force to the mass, how fast will it accelerate?

18. How much force is required to accelerate an 8 kg mass at 5 m/s^2 if there is 14 N of friction?

19. Find the acceleration of the 3 kg block in the following diagram.



20. What will be the acceleration of the 20 kg block below?

