

Name: _____

Newton's Laws of Motion Quiz Review

1. Newton's first law of motion states : _____

2. Newton's second law of motion states : _____

3. Newton's third law of motion states : _____

Instructions: Each of the items below is best represented by one of the Newton's Laws of Motion. Write a 1, 2 or 3 for each of the following to indicate whether it's Newton's 1st, 2nd or 3rd law.

4. _____ A climber pulls down on a rope causing his body to lift upward and rise along the rope.
5. _____ Force= Mass x Acceleration
6. _____ Two bumper cars collide into each other and each car jolts backwards
7. _____ When you give your friend a lift on your bike you have to pedal harder and faster to keep the same speed (acceleration) as you had when you were on your bike alone
8. _____ For every action there is an equal and opposite reaction.
9. _____ A smaller cannon ball leaves a cannon much faster than a larger, heavier cannon ball fired at the same time.
10. _____ When you are standing in a subway train and the train suddenly stops but your body continues to move forward.
11. _____ It is much easier to carry your backpack when it is empty rather than when it's full of textbooks.
12. _____ A boy is going down a slide. As he reaches the bottom, friction causes him to slow down and stop.
13. What is inertia?
14. Describe how mass and inertia are related.
15. How does mass effect acceleration?

16. Kg measures _____
17. N measures _____
20. The acceleration due to gravity on Earth is _____ and on the Moon it is _____.
21. What are the three formulas which describe the relationship between mass, force and acceleration?
22. A force of 52 N acts upon a 4 kg block sitting on the ground. Calculate the acceleration of the object.
23. A 5 kg block is pulled across a table by a force of 61 N. Calculate the acceleration of the object.
24. A roller coaster pushes a 25 kg person upward with a force of 300 N. What is the acceleration?
25. An object of mass 10 kg is accelerated upward at 2 m/s^2 . What force is required?
26. What is the mass of an object if a force of 17 N causes it to accelerate at 1.5 m/s/s ?
27. What is the acceleration of a 10 kg object if a force of 3 N is applied to it?
28. What is the mass of an object that requires a force of 25 N to accelerate at 5 m/s/s ?
29. How much weight is generated by an 80 kg person on planet earth? On the moon?
30. What is the mass of a falling rock on planet earth if it weighs 147 N?
18. M/s^2 measures _____
19. $1\text{N} =$ _____