

NAME:

PERIOD:

DATE:

Newton's Laws of Motion Review Sheet

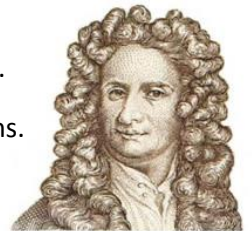
Acceleration	Action Force	Air Resistance	Balanced forces	Force
Friction	Gravity	Inertia	Momentum	Net force
Newton	Reaction Force			

WORD BANK

PART ONE: Fill in the Blank.

Use the words from the word bank to fill in the blanks. Each word is used once.

- _____ is an object's natural tendency to resist a change in its motion.
- _____ is any push or pull on an object. They are measured in Newtons.
- _____ is used when talking about the inertia of a moving object.
- _____ is the rate of change in an object's speed.
- _____ is when the net force on an object is zero.
- _____ is a force that resists motion when surfaces are in contact with each other.
- _____ is the force of attraction between all matter.
- _____ is the combination of all forces acting on an object.
- _____ & _____ are basically interchangeable since they both happen at the same time.
- A _____ is the unit that forces are measured in, and the name of a scientist.
- _____ is a kind of friction where air particles are one of the surfaces.



Gravity.
It's not just a good idea.
It's the Law.

PART TWO: Matching.

- | | |
|---|-----------------|
| 12. ____ The force of a 10kg object moving at 2 m/sec/sec. | e. 20 kg*m/sec |
| 13. ____ The momentum of a 10kg object moving at 2 m/sec. | N. 20 Newtons |
| 14. ____ The net force on a tug of war rope that is not moving. | n. 20 m/sec/sec |
| 15. ____ The guy who is said to have discovered gravity. | o. fig newton |
| 16. ____ A cookie made with fig filling. | t. Isaac Newton |
| 17. ____ A measurement of object accelerating. | w. 0 Newtons |



PART THREE: More Matching.

- | | |
|---|-------------------|
| 18. _____ it's a kind of friction | A. inertia |
| 19. _____ for every action force there's a... | G. air resistance |
| 20. _____ momentum is really just a moving object's... | I. momentum |
| 21. _____ it's responsible for your weight | R. reaction force |
| 22. _____ you can still move with zero net force if you have this | T. friction |
| 23. _____ it wastes energy as heat | Y. gravity |

PART FOUR: Do the Math.

Show the formula. Show the substitutions. Label the answers. Circle the answers.

24. A cannon shoots a 10 kg cannonball at an acceleration of 20 m/sec/sec (forward.) What is the force the cannonball will hit with?

24½. After the cannon (from the previous problem) fires, there will be a reaction force. Write down the correct measurement of that reaction force in the space below. (There's no math problem here, but thinking is required.)

25. A cue ball with a mass of 40g is moving at 2 meters/second. What is its momentum?

25½. When that cue ball hits both the #6 ball and the #8 ball at exactly the same time, how much momentum will the #6 ball have? **Show the math. Then explain it in the space below in a sentence (or two.)**



26. Two teams are in a tug of war.

Red team has: Lauren, Erin, Katie, and Emma. Each of them pulls with a force of 25 N.

Blue team has: Nate, Caden, Travis, Grant and John. Each of them pulls with a force of 20 N.

Use math to show who is winning the tug of war.

26¼. What is the net force on the tug of war rope? How do you know?

26½. What is the word bank word that describes this situation?

26¾. How can you know how much momentum each team has? (You can answer this with math thinking, not a math calculation.)

27. Gavin fires his arrow towards the target. The arrow is in flight. A slight breeze is blowing backwards against the arrow with a force of 2 Newtons. Gavin's compound bow put a force of 150 Newtons on the arrow when he shot it. What is the net force on the arrow at this time? (Be careful...) (Need math thinking, not a math calculation.)