**PART II - Extra Practice**

**Fill in the blanks.**

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an attractive force that acts between any two objects.

2. The greater the \_\_\_\_\_\_\_\_\_\_\_ of an object the \_\_\_\_\_\_\_\_\_\_\_ it’s gravitational attraction.

3. All objects have \_\_\_\_\_\_\_\_\_\_\_.

4. \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ are not the same thing.

5. Astronauts on the moon weigh \_\_\_\_\_\_\_\_\_\_\_ than they do on Earth.

6. Mass is the amount of \_\_\_\_\_\_\_\_\_\_\_ in an object.

7. \_\_\_\_\_\_\_\_\_\_\_ is a measure of the gravitational \_\_\_\_\_\_\_\_\_\_\_ on an object.

8. According to Newton’s \_\_\_\_\_\_\_\_\_\_\_\_\_ of Motion, scientists think of mass as \_\_\_\_\_\_\_\_\_\_\_\_, which is the the resistance of an object to \_\_\_\_\_\_\_\_\_\_\_ in \_\_\_\_\_\_\_\_\_\_. If an object is traveling in a straight line, its \_\_\_\_\_\_\_\_\_ will cause it to travel in a \_\_\_\_\_\_\_\_\_\_\_ path at the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and in the same \_\_\_\_\_\_\_\_\_\_\_\_ until a \_\_\_\_\_\_\_\_\_ changes its motion.

9. A \_\_\_\_\_\_\_\_\_\_\_ is used to measure the mass of an object.

10. A spring scale is used to measure the \_\_\_\_\_\_\_\_\_\_\_of an object. Weight is the \_\_\_\_\_\_\_\_\_\_\_ pull the earth has on our bodies.

11. \_\_\_\_\_\_\_\_\_\_\_ said that objects pick up speed at the same rate regardless of weight when \_\_\_\_\_\_\_\_\_\_\_ is the only force acting on them. A ten pound cannon ball and a one pound cannon ball will hit the ground at the\_\_\_\_\_\_\_\_time.

12. On the moon a hammer and a \_\_\_\_\_\_\_\_\_\_\_ will reach the ground at the same time when released at the same time.

13. All objects with mass have a force of attraction to other objects with mass called \_\_\_\_\_\_\_\_\_\_\_\_.

14. Newton’s Law of Universal Gravitation states that the force of gravity between any two objects depends upon the \_\_\_\_\_\_\_\_\_\_\_ of the objects and the \_\_\_\_\_\_\_\_\_\_\_ between them.

15. The force of gravity pulls toward the \_\_\_\_\_\_\_\_\_\_\_ of the planet. The force of gravity causes the objects to \_\_\_\_\_\_\_\_\_\_ as they fall. This means that they fall \_\_\_\_\_\_\_\_\_\_ every second that goes by.

16. Since the Earth is the largest thing around us, its pull on us is by far the \_\_\_\_\_\_\_\_\_\_\_.

17. The moon has 1/6th as much mass as Earth, so it has \_\_\_\_\_\_\_\_\_\_\_ the gravitational pull.

18. If you travel to a planet twice as massive as the Earth, the gravitational force would be \_\_\_\_\_\_\_\_ as much. You would \_\_\_\_\_\_\_\_twice as much as you do here on Earth.

19. Where would you have the most mass, on the Earth, the moon or on Jupiter?

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20. What variables affect air resistance? If you were a skydiver, how would you design a parachute to better slow you down? Assume there is no additional wind.

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21. What is terminal velocity? What two forces have to be exactly balanced to achieve it?

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22. On the moon why would a hammer and feather dropped at the same time land at the same time? Why doesn’t this happen on earth?

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23. Draw a stop action picture showing the motion of a falling cup of water. Explain what happens to the object’s speed as it falls and explain what happens to the water.

24. Explain using of Newton’s First Law of Motion how a coin fell into a jar in the inertia demos.

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25. Name a tool you can use to measure mass.

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26. Give an example of something massive. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27. Define force \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

28. Name one kind of force. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29. Inertia is “laziness”. What does that mean? Do objects have feelings?

a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

30. Does an object that is hard to move have a lot or a little inertia? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

31. If an object is easily moved, it has \_\_\_\_\_\_\_\_\_\_\_\_\_inertia.

32. An object at rest tends to … \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

33. An object in motion tends to … \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

34. The law of inertia is also known as Newton’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Law of Motion

35. Give an example of something with lots of inertia. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

36. Does a truck or a Smart car have more inertia? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

37. Is it harder to change the direction of a bowling ball or a baseball if they are traveling at the same speed, AND why?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

38. What would happen if an astronaut threw a baseball in outer space?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

39. Why don’t baseballs go on forever without stopping on Earth? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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40. Why can you pull a tablecloth out from under dishes and glasses without everything crashing to the floor?

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