

Name _____
Honors Physics
Period _____

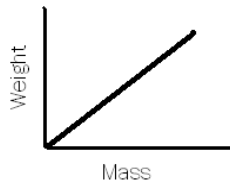


Date _____
Forces WS #4H
Mrs. Nadworny

Everyday Forces

Directions – Read textbook pages 141 – 148. Solve the following problems using the GUESS method and correct significant figures. Be sure to show ALL work!

1. The graph below shows the relationship between weight and mass for a series of objects. The slope of the graph represents



- (A) normal force
(B) momentum
(C) change of position
(D) acceleration due to gravity
2. The magnitude of the acceleration due to gravity on the surface of planet A is twice as great as on the surface of planet B. What is the ratio of the weight of mass X on the surface of planet A to its weight on the surface of planet B?
- (A) 2:1 (B) 1:2 (C) 1:4 (D) 4:1
3. Compared to the force needed to start sliding a crate across a rough level floor, the force needed to keep it sliding once it is moving is
- (A) greater (B) less (C) the same
4. The diagram below shows a granite block being slid at constant speed across a horizontal concrete floor by a force parallel to the floor.



Which pair of quantities could be used to determine the coefficient of friction for the granite on the concrete?

- (A) frictional force and normal force on the block
(B) mass and normal force on the block
(C) mass and speed of the block
(D) frictional force and speed of the block
5. When a 12 newton horizontal force is applied to a box on a horizontal tabletop, the box remains at rest. The force of static friction acting on the box is
- (A) 0 N (B) between 0 N and 12 N (C) 12 N (D) greater than 12 N

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6. A person weighing 490 newtons on the surface of Earth would weigh 80. newtons on the surface of the moon. What is the magnitude of the acceleration due to gravity on the surface of the moon?

7. An astronaut wearing his spacesuit has a mass of 105.7 kilograms and a weight of 1037 newtons on Earth. He travels to Neptune where the acceleration due to gravity is 14.07 meters per second². After suiting up to explore, he stands by the portal, surveying the landscape. Calculate the weight of the astronaut on Neptune.

8. A desk has wooden legs and sits on a wooden floor, where it experiences a normal force of 640 N. Someone pushes the desk to get it moving. Calculate the maximum amount of friction that can oppose the start of the motion.

9. An object encounters 6.75 newtons of force when being pushed across a surface. The surface supports the object with a 45 newton force. What materials could this be describing?