

Conceptual Forces Worksheet

Name: _____ **KEY** _____

Mod: _____

Date: _____

Directions: Answer the following problems below using complete sentences to earn full credit.

1. Compare and contrast contact vs. field forces. Give examples of each.

A field force and contact force both apply forces to objects. A contact force requires two objects to be in contact with one another to exist. A field force interacts with objects without contact through some force field. Examples of contact forces would be push and pull. Examples of field forces are gravity and electromagnetic.

2. How do we calculate the weight of an object?

$$w = mg$$
$$\text{weight (N)} = \text{Mass (kg)} \times \text{Acceleration Due to Gravity (9.8 } \frac{\text{m}}{\text{s}^2})$$

3. What is the weight of a 40kg object?

$$w = mg$$
$$w = (40 \text{ kg}) (9.8 \frac{\text{m}}{\text{s}^2})$$
$$w = 392 \text{ N}$$

4. What would be the mass of an object that weighted 200N?

$$w = mg$$
$$m = \frac{w}{g}$$
$$m = \frac{200 \text{ N}}{9.8 \frac{\text{m}}{\text{s}^2}} = 20.41 \text{ kg}$$

5. What changes depending on location in the universe, weight or mass? Explain...

Mass is the measure of matter in an object. Weight is the force of gravity pulling on an object. Mass stays constant regardless of location. Weight depends on the gravitational field produced by near by large masses.

6. State Newton's First Law of Motion.

Also known as the law of inertia. An object at rest remains at rest. An object in motion remains at a constant velocity, unless acted on by an unbalanced net force.

7. State Inertia.

The tendency for an object to resist change in motion. Directly proportional to mass.

8. Why is the normal force called a support force?

It is the force created by an object supporting another object.

Physics Conceptual Question Answers

Stathis Stefanidis

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