Forces - Set I

Phys Sci

Name_____ Class_____ Date_____

1 Equilibrium exists in a system where three forces are acting concurrently on an object. If the system includes a **5.0-newton force due north** and a **2.0-newton force due south**, the third force must be

A 7.0 N south
B 7.0 N north
C 3.0 N south
D 3.0 N north

2 Which terms represent a **vector quantity** and its respective unit?

A weight — kilogram
B mass — kilogram
C force — Newton
D momentum — Newton

3 Two forces are applied to a **2.0-kilogram** block on a frictionless horizontal surface, as shown in the diagram below.

4 A **2,400-kilogram car** is traveling at a speed of **20 meters per second**. Compared to the magnitude of the force required to stop the car in **12 seconds**, the magnitude of the force

5

7 force acts on the block at an **angle of 30°** above the horizontal.

What is the magnitude of **force F** if it establishes equilibrium?

A 50.0 N
B 86.6 N
C 100 N
D 187 N

concurrently on a point. The **resultant** of the two forces is

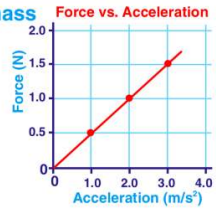
A 5 N northeast
B 10 N southwest
C 7 N northeast
D 7 N southwest

9 In to how many possible **components** can a **single force** be resolved?

A an unlimited number
B two components
C three components
D four components at right angles to each other

10 The graph below represents the relationship between the forces applied to an object and the corresponding accelerations produced. What is the **inertial mass** of the object?

A 1.0 kg
B 2.0 kg
C 0.50 kg
D 1.5 kg



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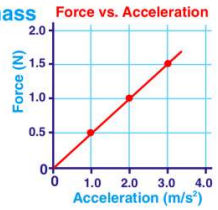

C