Name: _____

Period: _____

HW Unit 7:2 — Newton's Laws and Forces
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Assigned: Fri., 1/26 and Mon., 1/29
Due: Tues., 1/30 and Wed., 1/31

1. What is a force?
2. Why are forces vectors (be specific)?
3. Find the net force of the following, using the equation, please.

A)   10 N ← [M] → 4 N

B)   12 N ← [M] → 12 N

C)   12 N ← [M] → 12 N, 12 N (downward)
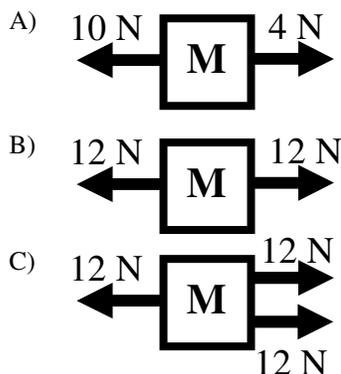
4. Use Q4 mass to answer following, (*could be more than one*)
    A) Which are accelerating?
    B) Which have balanced forces?
    C) Which cannot be at rest?
    E) Which could be traveling to the right, but slowing down?
    F) Which could be traveling at constant speed?
    G) Which could have v=0, but accelerating?
    H) Which could change direction?
    I) Which cannot be accelerating?

5. Your friend has a car that won't start. You help them push the car to a parking lot. When will you need a net force (Y or N)?
    A) ___ To start it moving?   B) ___ To move it faster?
    C) ___ To keep it moving?   C) ___ To stop it?
6. Why is a car hard to start moving?

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7. Which has more inertia?
    A) A 10 m/s car or a 20 m/s car?
    B) A heavy rock or a light rock?
    C) An astronaut on the earth or in space?

8. Balanced or unbalanced forces?
    A) __ When an object is changing motion?
    B) ___ When an elevator starts to move up?
    C) ___ When an elevator is between floors?
    D) __ When a car is using cruise control?
    E) ___ When a car is coming to a stop?

9. An unbalanced or net force causes an object to change _____ or _____. (*Use this for the next question.*)
10. A car has three ways to accelerate. What are they?

11. Which of Newton's Laws applies?
    A) __ A racing car needs to accelerate faster, so they make the car lighter.
    B) ___ You push your knuckles into a table and your knuckles start to hurt.
    C) ___ For a sky diver to fall thru the air at a constant speed, the force of gravity and the force of air friction must be equal.

12. TAKS: Which is more specific: Class or Phylum?
13. Which is more general: Kingdom or Genus?
14. Which are we more alike: a clam or a tree? Why?

15. Which of the four are most alike?
    A. Ursus maritimus   B. Ailuropoda melanoleuca
    C. Ursus arctos   D. Melursus ursinus