Name: __KEY__

Semester 1 Exam Review

| A. Free Fall | B. Friction | C. Mass | D. Reference Point | E. Weight |
| F. Inertia | G. Gravity | H. Force | I. Fluid | J. Volume |

1. __C__ The measurement of how much matter an object contains.
2. __E__ The measurement of the force of gravity on an object.
3. __B__ The force that one surface exerts on another when they rub together.
4. __D__ A place or object used for comparison to determine if something is in motion.
5. __A__ When only gravity is acting on a falling object, the object is said to be in
6. __F__ The tendency of an object to resist a change in its motion.
7. __H__ A push or a pull.
8. __I__ A material that can easily flow.
9. __J__ The amount of space that a gas takes up.
10. __G__ The force that pulls falling objects toward Earth.

Calculations:

11. Be able to carry out conversion problems given conversion factors and show your work:

1in = 2.54cm   12in = 1ft   100cm = 1m   60s = 1min   60min = 1hr

40cm = __1.3__ ft

$$40cm \times \frac{1 \ in}{2.54 \ cm} \times \frac{1 \ FT}{12 \ in} = 1.3 \ FT$$

30hr = __108,000__ s

$$30 \ HR \times \frac{60 \ min}{1 \ HR} \times \frac{60 \ s}{1 \ min} = 108,000 \ s.$$

12. If an input piston has a force of 25N applied to an area of 5cm² and the output piston is 30cm², what is the output force? (F1/A1 = F2/A2)

$$\frac{25N}{5cm^2} = \frac{F_2}{30cm^2} \qquad F_2 = 150 \ N$$

13. A rocket falls for 3 seconds. Ignoring air resistance, how high was the rocket? (d=½gt²)

$$\frac{1}{2}(10)(3)^2 = 45m$$

14. A rock falls for 5 seconds, how fast is it going right as it strikes the ground? (V=gt)

$$(10)(5) = 50m/s$$

15. What is the velocity of an airplane that flies west 600 miles in 2 hours? (V=d/t)

$$\frac{600mi}{2 \ HR} = 300mi/HR \ WEST$$