20. What is the kinetic energy of a 980kg race car traveling at 90m/s? $\frac{1}{2}mv^2 = 3,969000\ J$

21. An object moving at a constant speed of 25m/s possesses 450J of kinetic energy. What is the object's mass? $KE = \frac{1}{2}mv^2 \Rightarrow m = \frac{2KE}{v^2} = 1.44\ kg$

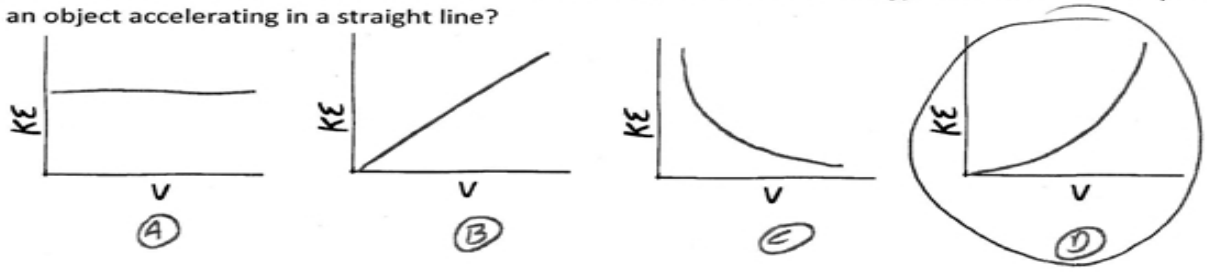
22. A 60kg runner has 1920J of kinetic energy. At what speed is she running?
$v = \sqrt{\frac{2KE}{m}} = 8\ \frac{m}{s}$

23. If the speed of a car is doubled, the kinetic energy of the car is
    a. Quadrupled
    b. Quartered
    c. Doubled
    d. Halved

24. A cart of mass m traveling at speed v has kinetic energy KE. If the mass of the cart is doubled and its speed is halved, the kinetic energy of the cart will be
    a. Half as great
    b. Twice as great
    c. One-fourth as great
    d. Four times as great

$KE = \frac{1}{2}mv^2$

25. Which graph best represents the relationship between the kinetic energy, KE, and the velocity of an object accelerating in a straight line?



26. An average force of 20N is used to pull back the string of a bow 0.6m. As the arrow leaves the bow, find the arrow's kinetic energy. $W = Fd = (20)(.6) = 12\ J \Rightarrow$
$PE = 12\ J \Rightarrow KE_f = 12\ J$

27. In diagram shows three positions, A, B, and C, in the swing of a pendulum released from rest at point A. Neglecting friction, which statement is true about this swinging pendulum?
    a. The potential energy at A equals the kinetic energy at C.
    b. The speed of the pendulum at A equals the speed of the pendulum at B.
    c. The potential energy at B equals the potential energy at C.
    d. The potential energy at A equals the kinetic energy at B.