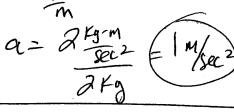
YEY

(1) F= ma
AT CONSTANT VELOCIAN, Q = D M/sac2 FRICTION FORCE = NETGHT = mg=
(400 kg)(9.8m/sec2) £3920 Å

Problems

- 1. A 400-kg bear grasping a vertical tree slides down at constant velocity. What is the friction force that acts on the bear?
- 2. If a mass of 1 kg is accelerated 1 m/s² by a force of 1 what would be the acceleration of 2 kg acted on by a force of 2 N?
- 3. How much acceleration does a 747 jumbo jet of mass 30,000 kg experience in takeoff when the thrust for each of four engines is 30,000 N?
- 4. If you stand next to a wall on a frictionless skateboard and push the wall with a force of 30 N, how hard does the wall push on you? If your mass is 60 kg, what's your acceleration?
- with an acceleration of 4 m/s². What is the friction force (4) (a) 30 N that acts on the firefighter?



- F=ma a=fm ToTAZ TIKWT=(4)(30,000 N)-120,000 Kgm
- a = 120,000 Kg·m saz + 4 m 50,000 Kg

 Sac2

(b)
$$a=6=30 \frac{\text{Ky-m}}{\text{Gc2}} = \frac{30 \frac{\text{Ky-m}}{\text{Gc2}}}{60 \frac{\text{Ky}}{\text{Gc2}}}$$

Questions

- 1. How much work is done on a 75-N bowling ball when you carry it horizontally across a 10-m-wide room? $W=Fd=75N\cdot 10m=(750\text{ J})$
- 2. How much work is done on it when you lift it 1 m? What power is expended if you lift it this distance in 1 s? $W = Fd = 75N \cdot 1 \text{m} = (75\text{J})$
- 3. What is its gravitational potential energy in the lifted position?

$$W = (mass)g = 48$$
 $Ep = mgh = (wt)h = 25N \cdot lm = 75J$

TOTAZ F= MQ=(80 Ky)(4m) =

Fruction bace = WT-TOTAL barce = 464N