**Choose:**

1) **A car of mass 1200 kg is moving with a velocity of 20 m/s. if the driver used the brakes and the speed of the car decreased to 8 m/s within 6 s, then the average force acting on the car during this period is ....**
a) 2400 N in the same direction of motion
<mark>b) 2400 N in the opposite direction of motion</mark>
c) 1200 N in the same direction of motion
d) 1200 N in the opposite direction of motion

2) **Calculate the magnitude of the resultant force that acts on the mass and also calculate its acceleration in next figure:**

50 kg   → 400 N

← 150 N
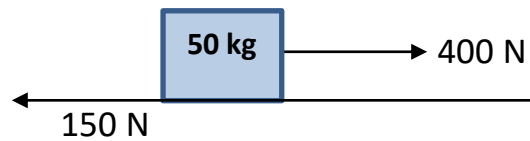
a=$\frac{400-150}{50}$= **5 m/s²**

3) **The egg usually breaks when it falls on the ground, while it doesn't break when it falls on a pillow from the same height because in case of breaking ....**
a) The change in momentum is larger
b) The change in momentum is smaller
c) The time impact is larger
<mark>d) The time impact is smaller</mark>

4) **Two bodies of the same mass, if two different forces acted on them where the ratio between them is $\frac{3}{1}$, then the ration between the acceleration of the two bodies respectively is ....**
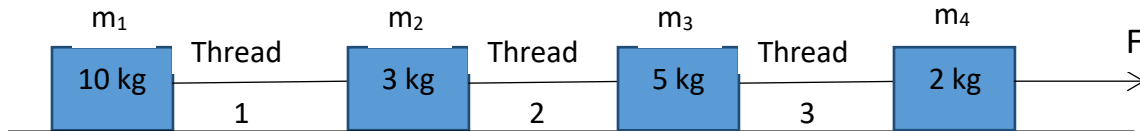   a) $\frac{1}{3}$ <mark>b) $\frac{3}{1}$</mark>   c) $\frac{1}{9}$ d) $\frac{9}{1}$

5) **The opposite graph shows the relation between acceleration of two cars A , B and the forces that causes them, calculate the ratio between the mass of A and the mass of B.**

$$\frac{m_A}{m_B} = \frac{a_B}{a_A} = \frac{5}{10} = \frac{1}{2}$$

a(m/s²)

10
5
A
B
25 50
F(N)
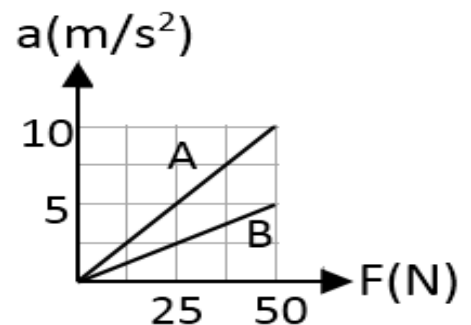
6) The following figure shows four masses that are connected with a thread of negligible mass. The masses are pulled over a frictionless surface by a horizontal force (F). Calculate the tension force between m_3, m_4

m_1	Thread	m_2	Thread	m_3	Thread	m_4	F
10 kg	1	3 kg	2	5 kg	3	2 kg	→

$$T_3 = \frac{10+3+5}{10+3+5+2} \; x \; F = 0.9F$$