TOPIC 23.5.1
BALANCED AND UNBALANCED FORCE

(FORCE = MASS X ACCELERATION)

CIKGU HUSNA

✱ **STEP 1: Click on the video below before answering the questions** 👆

✱ **STEP 2: Answer the following questions** 👆

1) Choose the correct formula to calculate resultant force:

    A. F = F x a

    B. F = m x a

    C. a = F x m

    D. m = F x a

ANSWER

2) Choose the correct formula to calculate mass of an object:

    A. m = F x a

    B. m = a ÷ F

    C. m = F ÷ a

    D. m = m x a

ANSWER

3) State the most suitable unit for acceleration:
   A. g/cm^3
   B. N/kg
   C. Km/s^3
   D. Nm

   ANSWER

4) *A car of mass 1800 kg is brought to a halt.*
   The deceleration is 2 m/s².
   What is the size of the force bringing the car to a halt?
   A. $F = \dfrac{m}{a} = \dfrac{1800}{2} = 900\ N$

   B. $F = \dfrac{a}{m} = \dfrac{2}{1800} = 0.001\ N/kg$

   C. $F = m \times a = 1800 \times 2 = 3600\ N$

   D. $F = m \times a = 1800 \times 2 = 3600\ N/kg$

   ANSWER

5) A car has a mass of 840 kg.
   The gravitational field strength g on Earth is 10N/kg.
   Calculate the force of the car.
   A. $F = \dfrac{m}{a} = \dfrac{840}{10} = 84\ N$

   B. $F = \dfrac{a}{m} = \dfrac{10}{840} = 0.02\ N/kg$

   C. $F = m \times a = 840 \times 10 = 8400\ N$

   D. $F = m \times a = 840 \times 10 = 8400\ N/kg$

   ANSWER

6) A car has an acceleration of 2.5 m/s².
   The force accelerating the car is 3750N
   Calculate the mass of the car.

   A. $m = \dfrac{F}{a} = \dfrac{3750}{2.5} = 1500\ kg$

   B. $m = \dfrac{a}{F} = \dfrac{2.5}{3750} = 0.0007\ kg$

   C. $m = F \times a = 3750 \times 2.5 = 9375\ kg$

   ANSWER

7) A runner has a mass of 70 kg. At one time, the accelerating force produced by the runner is 175 N.
Calculate the acceleration of the runner
(no need to show your working)

ANSWER =

8) A runner has a mass of 100 kg. At one time, the accelerating force produced by the runner is 95 N.
Calculate the acceleration of the runner
(no need to show your working)

ANSWER =

9) The car has a mass of 1200 kg.
Calculate, in newton, the force needed to give the car an acceleration of $0.3 m/s^2$. (no need to show your working)

ANSWER =

10) On Earth, a spacecraft has a weight (force) of 50 000 N.
The gravitational field strength at the Earth's surface is 10N/ kg.
Calculate the mass of the spacecraft.
(no need to show your working)

ANSWER =

✴ **STEP 3:**

Click the button "FINISH" at the end of the paper after you have answered all the questions. Please type in your FULL NAME. 🖐