

Resultant Force Worksheet

The diagram shows the equation $F = ma$ with handwritten annotations. A bracket under 'F' is labeled 'resultant force (N)'. A bracket under 'm' is labeled 'mass (kg)'. A bracket under 'a' is labeled 'acceleration (m/s^2)'. To the right is a red triangle with 'F' in the top section, 'm' in the bottom-left section, and 'a' in the bottom-right section.

1. Calculate the force needed to accelerate a 22kg cheetah at $15m/s^2$.
2. Calculate the force needed to accelerate a car with a mass of 1,600kg to its top speed on a single carriageway if its acceleration is $3m/s^2$.
3. Calculate the resultant force on a sprinter of mass 80kg who accelerates at $8m/s^2$.
4. Calculate the acceleration of a car of mass 800kg acted on by a resultant force of 3200N.