Resultant Forces (Foundation)
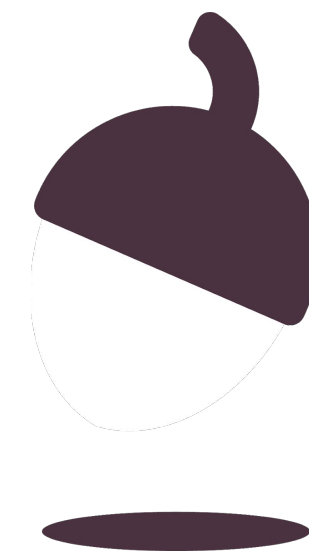
OAK NATIONAL ACADEMY

Recap Task - Scalars and Vectors

Draw a 2 column table, with appropriate headings, and sort these into scalar and vector quantities.

Add their units if you can.

temperature   mass   velocity

speed   length   displacement

forces   potential difference   acceleration
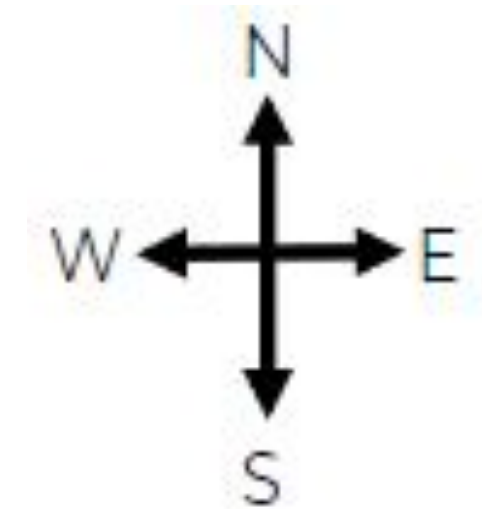
Task - Vector Addition

1. A person walks 30 m east, then another 100 m east.

2. A car travels 250 m west, and then another 200 m west.

3. A woman jogs 1000 m north, and after a rest jogs a further 5000 m in the same direction.

4. A bus travels 10000 m south, stops, and then travels 30000 m further south.
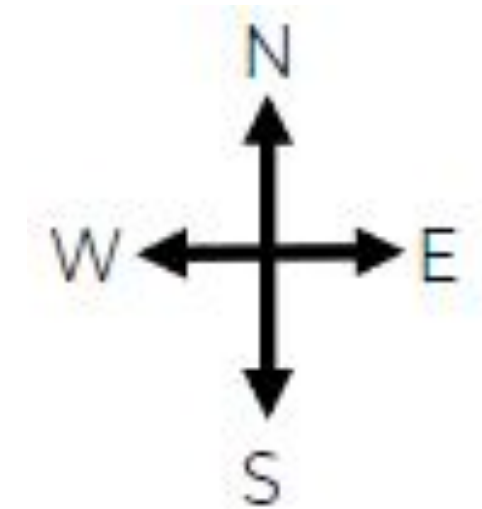
Task - Vector Subtraction

1. A person walks 100 m east, then 30 m west.

2. A car travels 200 m west, and then another 400 m east.

3. A woman jogs 1000 m north, and after a rest jogs a further 400 m in the opposite direction.

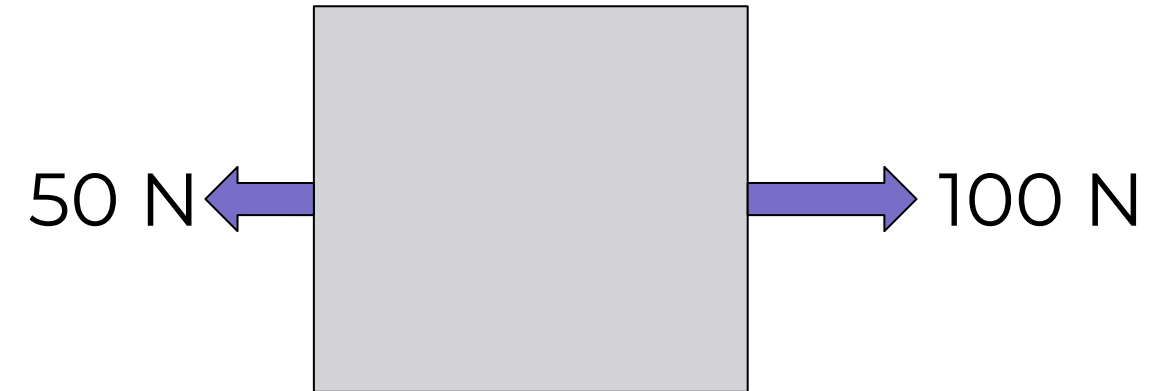4. A bus travels 10000 m south, stops, and then travels 30000 m north.
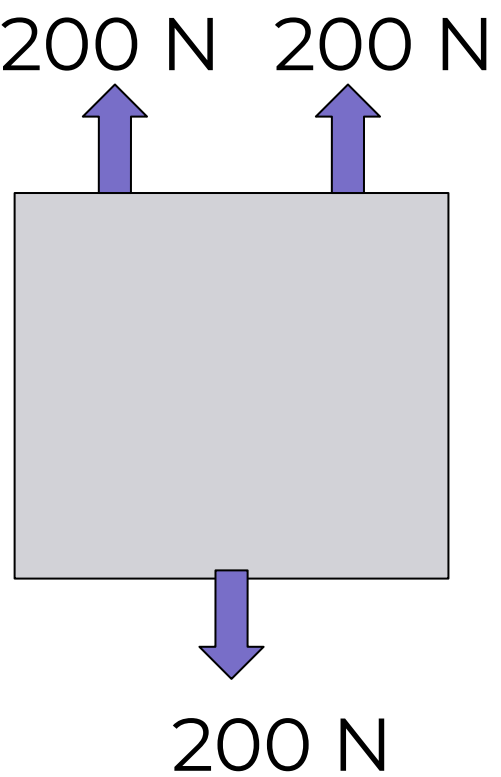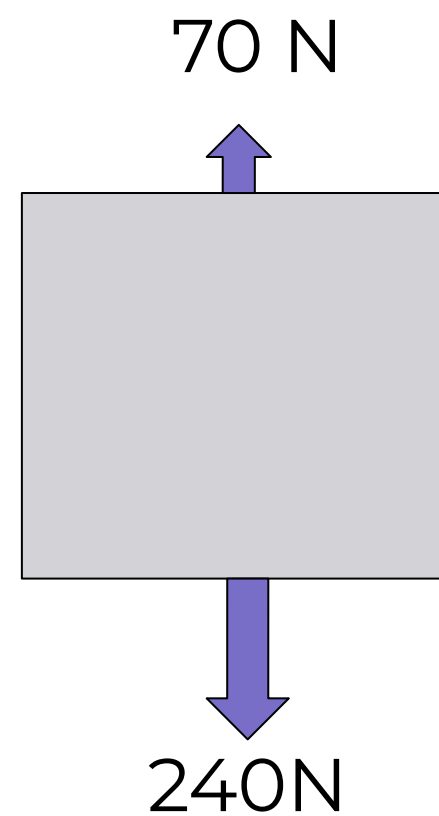
Independent Task- Resultant Forces

a

20 N

40 N

b

50 N

100 N

c

7.2 N

7.2 N

d

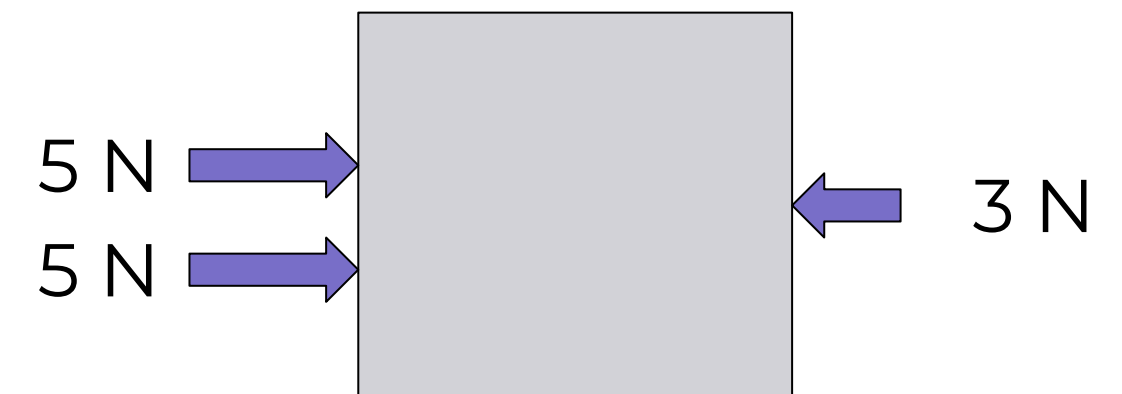200 N

200 N

200 N

e

70 N

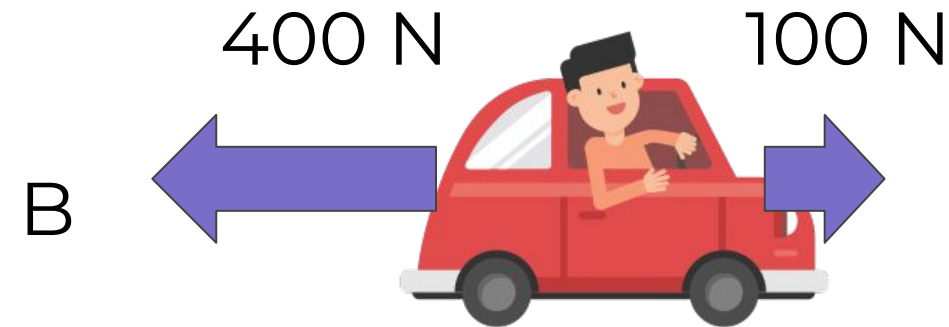240N

f

5 N

5 N

3 N
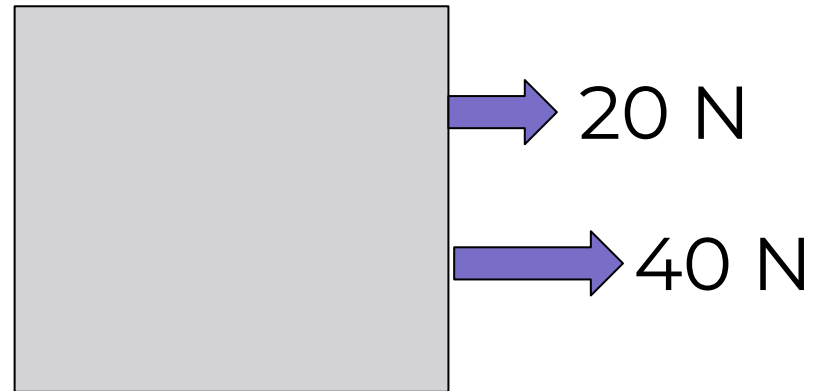
Exam Style Question

The diagrams, **A**, **B** and **C**, show the horizontal forces acting on a **moving** car.

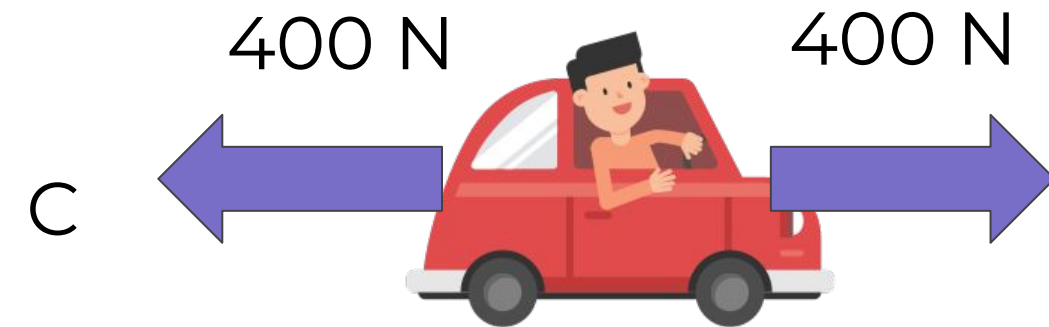Identfiy the description of the car's motion at the moment when the forces act. Select from the descriptions below.

100 N   400 N

A

400 N   100 N

B

400 N   400 N

C

| Decelerating | Accelerating | Stationary | Constant velocity |

Independent Practice

State what will happen to each car when the forces below are acting. Initial movement is stated below the car.

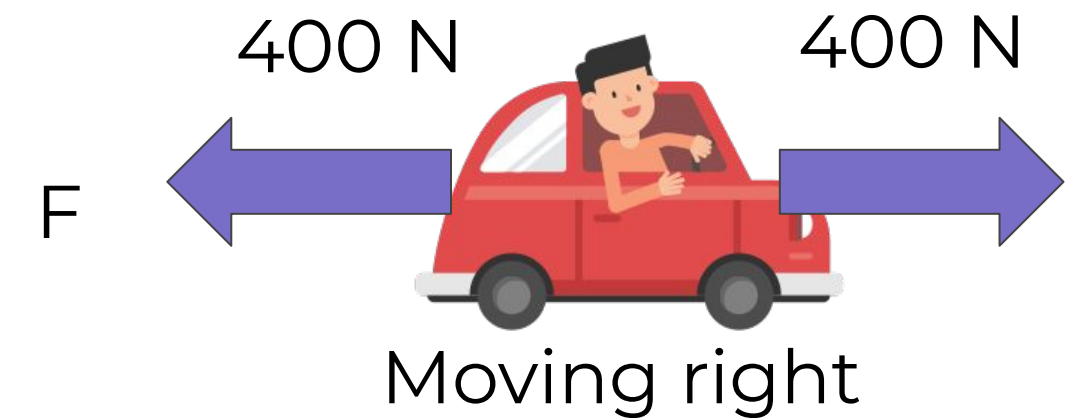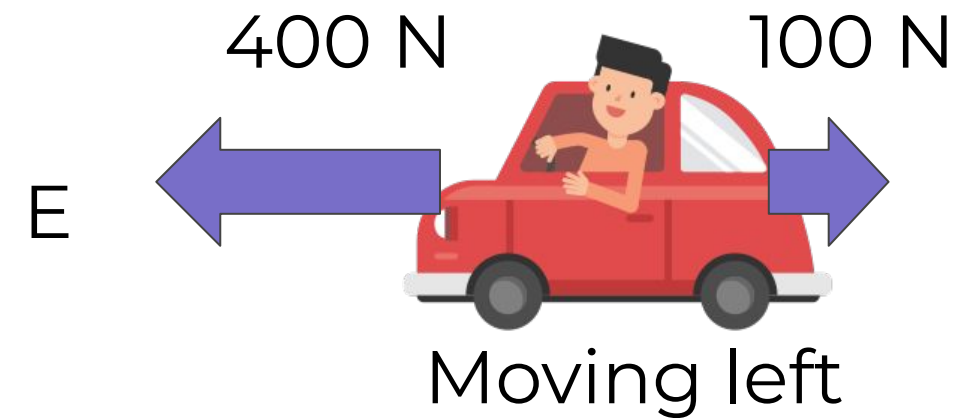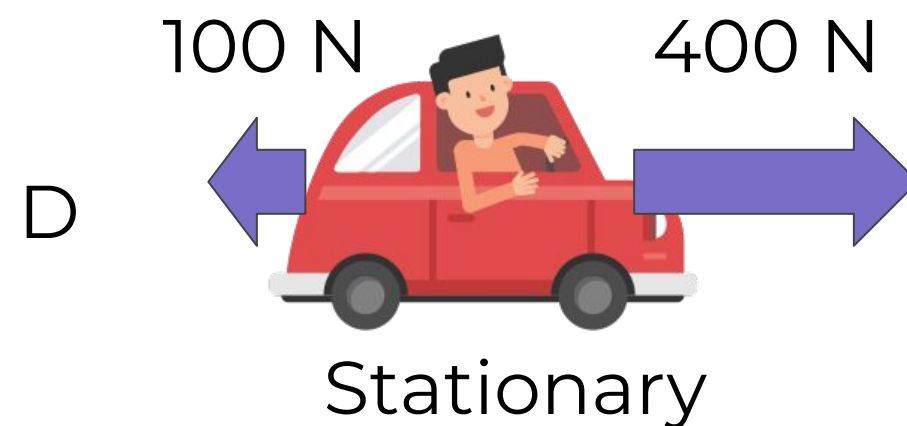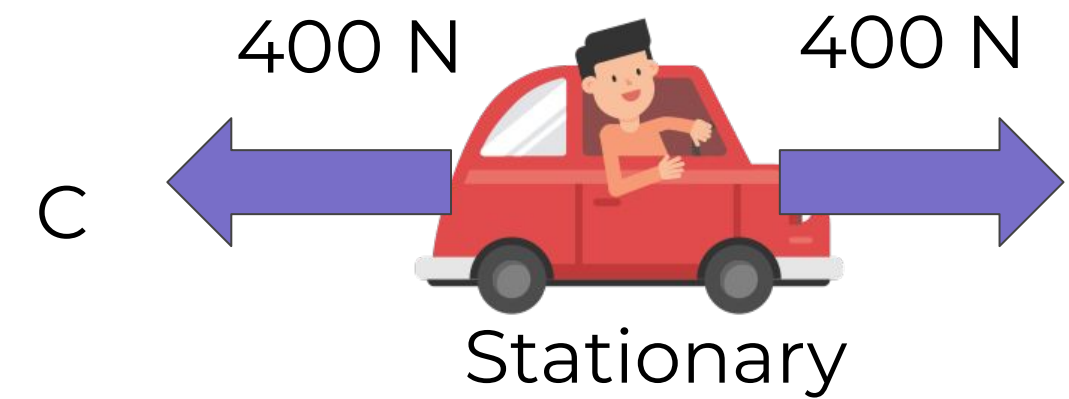Choose your answers from: 'constant velocity, 'accelerate' or 'decelerate'

A
400 N
Moving right

B
100 N 300 N
Moving right

C
400 N 400 N
Stationary

D
100 N 400 N
Stationary

E
400 N 100 N
Moving left

F
400 N 400 N
Moving right