

Labo 01A – Calcul du temps de trajet

Constants:

DELTA_X = 3km

DELTA_Y = 10km

SPEED_ROAD = 5km/h

SPEED_TERRAIN = 2km/h

Variables:

distance_road = 6km

distance_terrain = ?km

time_total = 0

Output:

time_total

Algorithm:

time_total = DISTANCE_ROAD / SPEED_ROAD + distance_terrain / SPEED_TERRAIN

distance_terrain = $\left((\text{DELTA_Y} - \text{DISTANCE_ROAD})^2 + (\text{DELTA_X})^2 \right)^{1/2}$ (it has to be 5km)

Pseudo-code:

Declare and initialize constant integer DELTA_X = 3km

Declare and initialize constant integer DELTA_Y = 10km

Declare and initialize constant double DISTANCE_ROAD = 6km

Declare and initialize constant integer SPEED_ROAD = 5km/h

Declare and initialize constant integer SPEED_TERRAIN = 2km/h

Declare and initialize double variable distance_terrain = 0

distance_terrain = $\left((\text{DELTA_Y} - \text{DISTANCE_ROAD})^2 + (\text{DELTA_X})^2 \right)^{1/2}$

Declare and initialize double variable `time_total = 0`

`time_total = DISTANCE_ROAD / SPEED_ROAD + distance_terrain / SPEED_TERRAIN`

Show `time_total`

Control of the result:

`distance_terrain = 5`

`time_total = 3.7`