#include <iostream>

#include <string>

#include <math.h>

using namespace std;

class car{

public:

string make;

string model;

int year;

int speed\_x;

int speed\_y;

int x;

int y;

void accelerate(int ax,int ay){

speed\_x+=ax;

speed\_y+=ay;

}

void brake(int bx, int by){

speed\_x-=bx;

speed\_y-=by;

}

void moves(){

x+=speed\_x;

y+=speed\_y;

}

bool detect\_collision(car carx){

double distance=sqrt(pow(carx.x-this->x,2)+pow(carx.y-this->y,2));

if (distance==0){return true;}else{return false;}

}

double time\_to\_collision(car carx){

double relative\_speed =sqrt(pow((carx.speed\_x-this->speed\_x),2)+pow((carx.speed\_y-this->speed\_y),2));

if(relative\_speed==0){cout<<"INFINITE";}else{

double time=(sqrt(pow(carx.x-this->x,2)+pow(carx.y-this->y,2)))/relative\_speed;

return time;}

}

};

int main()

{

car car1;

car car2;

car1.make="Hyundai";

car2.make="maruti";

car1.model="alto";

car2.model="creta";

car1.year=2006;

car2.year=2019;

car1.x=4;

car1.y=4;

car2.x=1;

car2.y=1;

car1.speed\_x=1;

car1.speed\_y=2;

car2.speed\_x=1;

car2.speed\_y=1;

car1.accelerate(2,3);

cout<<car1.time\_to\_collision(car2)<<endl;

cout<<car1.detect\_collision(car2);}