```
//Devin Hardy
//CS372
//Throttle

#include <iostream>
#include <iomanip>
#include <cstdlib>

using namespace std;



class Throttle
{
private:
    int position;
    int Top_Position;

public:
    //Constructor
    Throttle();
    Throttle(int Max_Speed);
    Throttle(int Max_Speed, int speed);
    //Modification Methods
    void shutoff();
    void shift(int val);
```

```
    //Constant Methods
    double flow() const;
    bool is_on() const;
    //Display Method
    void showPos();
};

    // Class Methods Explained
    // Constructor Methods
    Throttle::Throttle(int Max_Speed)
    {
        Top_Position = Max_Speed;
        position = 0;
    }

    Throttle::Throttle(int Max_Speed, int speed)
    {
        Top_Position = Max_Speed;
        position = speed;
    }

    // Modification Methods
    void Throttle::shutoff()
    {
        position = 0;
```

```
    return;
}

void Throttle::shift(int val)
{
    position = position + val;
    if(position > Top_Position)
        position = Top_Position;
    if(position < 0)
        position = 0;
    return;
}

// Constant Methods
double Throttle::flow() const
{ return (position / static_cast<float>(Top_Position)); }

bool Throttle::is_on() const
{return position;}

//Display Method
void Throttle::showPos()
{
    cout << position;
}
```

```
int main()
{
    Throttle car(6);
    Throttle truck(30);
    Throttle shuttle(20, 6);
    //Test car
    cout << "Car Test" << endl;
    car.shift(4);
    car.shift(-2);
    car.showPos();
    cout << endl;
    car.shift(6);
    car.showPos();
    cout << endl;
    car.shift(-4);
    car.shift(-5);
    if(car.is_on())
        cout << "Is on" << endl;
    else
        cout << "Is off" << endl;
    //Test truck
    cout << endl << "Truck Test" << endl;
    truck.shutoff();
    truck.shift(4);
```

```
truck.shift(14);
truck.shift(-8);
truck.shutoff();
truck.shift(2);
cout << "Flow " << truck.flow() << endl;
truck.shutoff();
//Test Shuttle
cout << endl << "Shuttle Test" << endl;
if(shuttle.is_on())
    cout << "Is on" << endl;
else
    cout << "Is off" << endl;
shuttle.shift(22);
shuttle.shift(-5);
cout << "Flow " << shuttle.flow() << endl;
shuttle.shift(-60);
shuttle.shutoff();
return 0; }
```

```
Car Test
2
6
Is off

Truck Test
Flow 0.0666667

Shuttle Test
Is on

Flow 0.75
```