

Algorithm: GasPrice  
Programmer: Bob Harder

**Version 1** – all in main  
constants and variables  
GAS\_PRICE = 3.139

```
int monthlyMileage
double mpg
double monthlyGasCost

(Level 0) Main
// input
print Enter monthly mileage :
input monthlyMileage
print Enter miles per gallon :
input mpg

// process
monthlyGasCost = ( monthlyMileage / mpg ) * GAS_PRICE

// output
print You spend $ 999.99 a month on gas!
output monthlyGasCost
```

**Version 2** – methods without parameters  
constants and variables  
GAS\_PRICE = 3.139

```
int monthlyMileage
double mpg
double monthlyGasCost

(Level 0) Main
getInfo()
calculateCost()
outputResults()
```

```
-----

(Level 1) getInfo()
print Enter monthly mileage :
input monthlyMileage
print Enter miles per gallon :
input mpg
```

```
(Level 1) calculateCost()
monthlyGasCost = ( monthlyMileage / mpg ) * GAS_PRICE
```

```
(Level 1) outputResults()
print You spend $ 999.99 a month on gas!
output monthlyGasCost
```

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**Version 3**– methods with parameters  
constants and variables same as Version 1

```
(Level 0) Main  
getInfo( monthlyMileage, mpg )  
calculateCost( monthlyMileage, mpg, monthlyGasCost )  
outputResults( monthlyGasCost )  
-----
```

```
(Level 1) getInfo( monthlyMileage, mpg )  
print Enter monthly mileage :  
input monthlyMileage  
print Enter miles per gallon :  
input mpg
```

```
(Level 1) calculateCost( monthlyMileage, mpg, monthlyGasCost )  
double gallons
```

```
gallons = monthlyMileage / mpg  
monthlyGasCost = gallons * GAS_PRICE
```

```
(Level 1) outputResults( monthlyGasCost )  
print You spend $ 999.99 a month on gas!  
output monthlyGasCost
```

**Version 4** – methods and function  
constants and variables same same as Version 1

```
(Level 0) Main  
getInfo( monthlyMileage, mpg )  
monthlyGasCost = calculateCost( monthlyMileage, mpg )  
outputResults( monthlyGasCost )  
-----
```

```
(Level 1) void getInfo( monthlyMileage, mpg )  
print Enter monthly mileage :  
input monthlyMileage  
print Enter miles per gallon :  
input mpg
```

```
(Level 1) double calculateCost( monthlyMileage, mpg, monthlyGasCost )  
double gallons
```

```
gallons = monthlyMileage / mpg  
monthlyGasCost = gallons * GAS_PRICE  
return monthlyGasCost
```

```
(Level 1) void outputResults( monthlyGasCost )  
print You spend $ 999.99 a month on gas!  
output monthlyGasCost
```