```
#CPSC 231 FAll 2012
#Assignment 1
#Brad Cossette
# Version history:
# v1.1
# - Added additional documentation on program limitations, and the
purpose of the program
# - Simplified a few print statements
# v1.0
# - Initial version.


#This program is designed to calculate the sale price of an item after
tax is applied, and
#calculate the change due to a customer (as well as breakdown of the
change by denomination),
#when a user provides the base cost of an item, as well as how much was
paid for it.

#Constants
GST = 1.05

#Collect the sale price, and customer payment. Note that we don't check
to make sure that
#customer has typed in a valid number, nor do we check to see if they
underpaid.
item_price_text = input( "Please enter the price of the item for sale: "
)
item_price = float( item_price_text )

customer_payment_text = input( "Please enter the customer's payment: " )
customer_payment = float( customer_payment_text )

#Calculate the GST, and display the final sale price, and change due.
final_price = item_price * GST
customer_owed = customer_payment - final_price

print( "\n" )
print( "Final price (including 5%% GST): $%.2f" % final_price ) #Have to
use two "%'s" to print a single %
print( "Customer paid: $%.2f, customer is owed: $%.2f" %(
customer_payment, customer_owed ) )

#Calculate the breakdown of the change into dollars, quarters, dimes, and
pennies. To
#do this, for each denomination of change we can give back---starting at
the largest
#(1 dollar)---we use integer division to determine the largest whole
number of that
#denomination to give back, and then modulo division to determine how
much change is
#still leftover. We then repeat this process with the leftover change,
but use the next
```

```
#lowest denomination of change, until we finally have determined how many
pennies to give back,
#and then we finish.

leftover_change = customer_owed #Using a different, more meaningful
variable name here.

dollars = leftover_change // 1.0
leftover_change = leftover_change - dollars

#print( "DEBUG Leftover change // 0.25: ", leftover_change // 0.25, "
remainder: ", leftover_change % 0.25 )
quarters = leftover_change // 0.25
leftover_change = leftover_change % 0.25

#print( "DEBUG Leftover change // 0.10: ", leftover_change // 0.10, "
remainder: ", leftover_change % 0.10 )
dimes = leftover_change // 0.10
leftover_change = leftover_change % 0.10

pennies = leftover_change
#print( "DEBUG Leftover change: ", leftover_change )

#Display the change breakdown
print( "Breakdown of change due back:" )
print( "\tDollars:  %d" % dollars )
print( "\tQuarters: %d" % quarters )
print( "\tDimes:    %d" % dimes )
print( "\tPennies:  %d" % pennies )
```