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Problem: Write a program to compute the price of a theater ticket

1. Pseudocode

```
Establish constant values for prices and tiers
Define the function that calculates carpeting costs
    Multiply length times width to get square feet
    Multiply square feet by selected quality tier to get
cost per square foot
    Print the result to the screen and return
```

```
Print opening statement and offer quality choices
Prompt user for input of carpet quality
```

```
Determine user selection and assign it to a variable
```

```
Prompt user for measurements of room in ft
```

```
Call the function to calculate the carpeting cost using
input values as parameters
```

2. Actual code

```
#Establish constant values for prices and tiers
```

```
budgetQuality = 2.00
```

```
standardQuality = 5.50
```

```
premiumQuality = 9.50
```

```
#Define the function that calculates carpeting costs
```

```
def costOfCarpeting (length, width, quality) :
```

```
    #Multiply length times width to get square feet
```

```
    sqFt = length * width
```

```
    #Multiply square feet by selected quality tier to get cost per square foot
```

```
    costPerRoom = format(sqFt * quality, '.2f')
```

```
    #Print the result to the screen
```

```
    print("The cost to carpet your room is $" +
```

```
costPerRoom + " at $" + str(format(quality, '.2f')) + " per square foot.")
```

```
    return
```

```
#Print opening statement
```

```
print("Welcome to UMGCarpeting! Where we 'lay the groundwork' for your
success!\n")
```

```

print("Enter the number of your selection:\n" +
      "1. Budget Quality Carpeting (our cheapest) -- $2.00\n" +
      "2. Standard Quality Carpeting (our most popular) -- $5.50\n" +
      "3. Premium Quality Carpeting (our fanciest, with that special padding) -- $9.50\n")

```

```

#Prompt user for input of carpet quality
selectedQuality = int(input("Which would you prefer? "))

```

```

#Determine user selection and assign it to a variable

```

```

if (selectedQuality == 1) :
    carpetQuality = budgetQuality
elif (selectedQuality == 2) :
    carpetQuality = standardQuality
elif (selectedQuality == 3) :
    carpetQuality = premiumQuality
else :
    print("Sorry, that is not a valid selection. Thank you!")

```

```

#Prompt user for measurements of room in ft
print("\nGreat! Now it's time to enter the measurements of your room!")
roomWidth = float(input("Please enter the width of your room, in feet: "))
roomLength = float(input("Please enter the length of your room, in feet: "))

```

```

#Call the function to calculate the carpeting cost
costOfCarpeting(roomLength, roomWidth, carpetQuality)

```

3. Test Cases

a. Test Case 1

- i. Input: width = 16, length = 21, choice = 2
- ii. Expected output: \$1848
- iii. Actual output:

```

Welcome to UMGCarpeting! Where we 'lay the groundwork' for your success!

Enter the number of your selection:
1. Budget Quality Carpeting (our cheapest) -- $2.00
2. Standard Quality Carpeting (our most popular) -- $5.50
3. Premium Quality Carpeting (our fanciest, with that special padding) -- $9.50

Which would you prefer? 2

Great! Now it's time to enter the measurements of your room!
Please enter the width of your room, in feet: 16
Please enter the length of your room, in feet: 21
The cost to carpet your room is $1848.00 at $5.50 per square foot.
>>>

```

b. Test Case 2

- i. Input: width = 10, length = 11.5, choice = 3
- ii. Expected output: \$1092
- iii. Actual output:

```
Welcome to UMGCarpeting! Where we 'lay the groundwork' for your success!

Enter the number of your selection:
1. Budget Quality Carpeting (our cheapest) -- $2.00
2. Standard Quality Carpeting (our most popular) -- $5.50
3. Premium Quality Carpeting (our fanciest, with that special padding) --

Which would you prefer? 3

Great! Now it's time to enter the measurements of your room!
Please enter the width of your room, in feet: 10
Please enter the length of your room, in feet: 11.5
The cost to carpet your room is $1092.50 at $9.50 per square foot.
>>>
```