# Section: 1003

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**Program Development Worksheet – Program 2, Part A**

1. **Understand the problem** – At a local movie theater the price of an adult ticket is $10.00 and a child's ticket is $6.00. The movie distributor keeps 80 percent of the revenue earned from ticket sales. The remaining 20 percent goes to the movie theater. Write a program that calculates the theater's gross ticket sales, net box office profit and the amount paid to the distributor for a movie. The program should ask for the name of the movie and how many adult and child tickets were sold.

Here is a sample of what your program should look like when it is executed. Fill in the blank lines with the amounts that should be displayed, given the inputs shown.

Enter the movie name: The Imitation Game

How many adult tickets were sold: 30

How many children's tickets were sold: 10

Gross Ticket Sales: \_\_\_\_\_$360.00\_\_\_\_\_

Theater Net Profit: \_\_\_\_$72.00\_\_\_\_

Amount Paid to Distributor: \_\_\_$288.00\_\_\_\_

**2. List constants and variables (inputs and outputs)**

Constants Inputs Outputs

  Gross ticket sales movie name

  Theater net profit adult tickets sold

  Amount paid to distributer child tickets sold

**3. Write the algorithm** – the list of steps needed to solve the problem. No C++ statements please! Your steps should start with words like Get, Calculate, Display.

Get movie name from user

Get amount of child tickets sold

Get amount of adult tickets sold

Calculate the gross net profit

Calculate the net profit

Calculate the amount paid back to the distributer

Display the results of gross ticket sales

Display the results of theater net profit

Display the results of paid to distributer

**Program Development Worksheet – Program 2, Part B**

1. **Understand the problem** – A car rental agency charges $15 per day plus $0.12 per mile. Taxes and fees of 25% are added to the total of the daily charges plus the mileage charges. Ask the user to enter the number of days the car will be rented, the beginning odometer reading and the ending odometer reading. Display the daily charges, mileage charges, taxes and fees and the total bill.

Enter the number of days rented: 7

Enter the beginning odometer reading: 5000

Enter the ending odometer reading: 5500

Daily rental charges: \_\_\_\_\_$105.00\_\_\_\_\_

Mileage charges: \_\_\_\_$60.00\_\_\_\_\_

Taxes and fees: \_\_\_\_\_$41.25\_\_\_\_\_

Total bill: \_\_\_\_$206.25\_\_\_\_\_

**2. List constants and variables (inputs and outputs)**

Constants Inputs Outputs

  Rental charges days rented

Mileage charge beginning odometer

Taxes and fees ending odometer

Total bill

**3. Write the algorithm** – the list of steps needed to solve the problem. **No C++ statements please!** Your steps should start with words like Get, Calculate, Display.

Get days rented

Get the reading from the odometer in the beginning

Get the reading from the odometer from the ending

Calculate the daily charge

Calculate the mileage charge

Calculate the taxes and fees

Add to come up with the total bill

Display the daily charge

Display mileage charge

Display the amount of taxes and fees

Display the total amount due for the rental