**Review Questions**

1. Your company needs a program to compute the amount to charge customers for mowing their lawns for an entire season. An employee will type in the total area of the customer’s lawn in square feet. Your company charges 1 cent per square foot to mow a lawn one time and will mow each lawn once a week for 15 weeks. Match each of the following parts of this problem to its correct location in a defining table.

* Multiply by 15 a. Input
* season cost b.Processing
* area of lawn c.Output
* multiply by 0.01

**Answer**

|  |  |  |
| --- | --- | --- |
| Input | Processing | Output |
| * area of lawn | * multiply by 0.01 * multiply by 15 | * Season cost |

1. Your company needs a program to compute the amount to charge customers for mowing their lawns for an entire season. An employee will type in the total area of the customer’s lawn in square feet. Your company charges 1 cent per square foot to mow a lawn one time and will mow each lawn once a week for 15 weeks. Number each of these steps to solve the problem in the correct order from first (1) to last (3).
   1. Multiply the area of the lawn by 0.01 and then by 15 to get the season cost.
   2. Display the season cost for the user to see.
   3. Get the total area of the lawn from the user.

**Answer**

Step 1 Get the total area of the lawn from the user.

Step 2 multiply the area of the lawn by 0.01 and then by 15 to get the season cost.

Step 3 Display the season cost for the user to see.

1. You have been asked to write a computer program that will output an employee’s after tax pay. Your program will read from the keyboard the number of regular hours and overtime hours that the employee worked and the employee’s regular hourly wage. The employee is paid a bonus of 1.5 time’s regular pay for each overtime hour worked. Tax is 15% of the employee’s gross pay. Match each of the following parts of this problem to its correct location in a defining table.

* multiply overtime hours by regular hourly wage by 1.5 to get overtime pay (overPay = overHours \* regWage \* 1.5)
* subtract tax from gross pay to get net pay (netPay = grossPay - tax)
* overtime hours
* multiply regular hours by regular hourly wage to get regular pay (regPay = regHours \* regWage)
* multiply gross pay by 0.15 to get tax (tax = grossPay \* 0.15)
* regular hourly wage
* regular hours
* add regular pay and overtime pay to get gross pay (grossPay = regPay + overPay)
* net pay

**Answer**

|  |  |  |
| --- | --- | --- |
| Input | Processing | Output |
| * regular hours * overtime hours * regular hourly wage | * **multiply regular hours by regular hourly wage to get regular pay (regPay = regHours \* regWage)** * **multiply overtime hours by regular hourly wage by 1.5 to get overtime pay (overPay = overHours \* regWage \* 1.5)** * **add regular pay and overtime pay to get gross pay (grossPay = regPay + overPay)** * **multiply gross pay by 0.15 to get tax (tax = grossPay \* 0.15)** * **subtract tax from gross pay to get net pay (netPay = grossPay - tax)** | * **net pay** |

1. You have been asked to write a computer program that will output an employee’s after tax pay. Your program will read from the keyboard the number of regular hours and overtime hours that the employee worked and the employee’s regular hourly wage. The employee is paid a bonus of 1.5 times regular pay for each overtime hour worked. Tax is 15% of the employee’s gross pay. Number each of these steps to solve the problem in the correct order from first (1) to last (7).
   1. Display net pay for the user to see.
   2. Add regular pay and overtime pay to get gross pay. (grossPay = regPay + overPay)
   3. Multiply gross pay by 0.15 to get tax. (tax = grossPay \* 0.15)
   4. Multiply overtime hours by regular hourly wage by 1.5 to get overtime pay. (overPay = overHours \* regWage \* 1.5)
   5. Subtract tax from gross pay to get net pay. (netPay = grossPay - tax)
   6. Multiply regular hours by regular hourly wage to get regular pay. (regPay = regHours \* regWage)
   7. Get regular hours, overtime hours, and regular hourly wage from the user.

**Answer**

**Step 1.** Get regular hours, overtime hours, and regular hourly wage from the user.

**Step 2**. Multiply regular hours by regular hourly wage to get regular pay. (regPay =

regHours \* regWage)

**Step 3.** Multiply overtime hours by regular hourly wage by 1.5 to get overtime pay.

(overPay = overHours \* regWage \* 1.5)

**Step 4.** Add regular pay and overtime pay to get gross pay. (grossPay = regPay +

overPay)

**Step 5.** Multiply gross pay by 0.15 to get tax. (tax = grossPay \* 0.15)

**Step 6.** Subtract tax from gross pay to get net pay. (netPay = grossPay - tax)

**Step 7.** Display net pay for the user to see.

1. Which of the following are control structures? (Mark all that apply.)
   1. input
   2. try, catch, and throw
   3. computation
   4. selection
   5. sequence
   6. output
   7. repetition
   8. storage

**Answer**

Control structures

* try, catch, and throw
* selection
* sequence
* repetition

1. Match each control structure to its correct definition.
   1. Sequence
   2. Selection
   3. Repetition

* Causes the computer to select one group of statements to execute and another group or groups to skip.
* Causes the computer to repeat a group of statements.
* Causes the computer to execute statements in the order they are written

**Answer**

Sequence: Causes the computer to execute statements in the order they are written

Selection: Causes the computer to select one group of statements to execute and another

group or groups to skip.

Repetition: Causes the computer to repeat a group of statements.