* 1. Write pseudo-code for Example 5 of Lab 01.

Begin

Variables a, b, c

Input a, b, c

If a > b Then

If a > c Then

Output a

Else c

End If

If b > c Then

Output b

Else c

End If

End If

End

* 1. Write pseudo-code and draw flow chart. Ask a user to enter exam scores for five different courses and determine whether the student is passing or failing the course. Calculate the average score, the number of failed courses, and the number of passed courses. To confirm your solution, trace through the designed flowchart and pseudo-code by using the following test case: 88, 65, 45, 23, 77.

**Pseudo Code:**

Start

Declare Scores [5], Average

Set Total=0, Passed=0, Failed=0

For i from 0 to 4 Do

Output “Enter score for course: “, i+1

Input Scores[i]

Total += Scores [i]

If Scores[i] >= 50 Then

Passed += 1

Else Failed += 1

End If

End For

Average = Total / 5

Output “Average score is: ”, Average

Output “Number of Passed Courses: ”, Passed

Output “Number of Failed Courses: ”, Failed

End

**Flow Chart:**

Input 88, 65, 45, 23, 77

Total = 88+65+45+23+77

Average = Total / 5

If Score [i] >= 50

Output Failed

Output Passed

No

Yes

Output 88, 65, 45, 23, 77

Output Passed Courses = 3

Output Failed Courses = 2

* 1. Ask a user to enter a number and then display the factorial of the entered number.

**Pseudo Code:**

Start

Variables n, factorial

Input n

Set factorial = 1

For i from 1 to n do

factorial = factorial \* i

Increase i by 1

End For

Output factorial

End

* 1. One of the jobs that Joe Roberts has been given at work is to order special paper for a report for a board meeting. The paper comes in reams of 500 sheets. He always makes five more copies than the number of people that will be there. Joe wants to know how many reams of paper he needs for a meeting. He can order only whole, not partial, reams. Assume the required number of pages will not equal an exact number of reams. Test your solution with the following data: The report is 140 pages long. There will be 25 people at the meeting.

**Pseudo Code:**

Begin

Declare Total Copies, Total Pages, Reams Needed

Set People Number = 25, Sheets per Ream = 500, Extra Copies = 5, Report Pages = 140

Total Copies = People Number + Extra Copies

Total Pages = Total Copies \* Report Pages

Reams Needed = Total Pages / Sheets per Paper

Output Reams Needed

End

**FLOW CHART:**

Declare Variables: Total Copies, Total Pages, Realms Needed

Set: People Number = 25, Sheats per Ream = 500, Extra Copies = 5, Report Pages = 140

Total Copies = People Number + Extra Copies

Total Pages = Total Copies \* Report Pages

Reams Needed = Total Pages / Sheets per Ream

Output Reams Needed

* 1. would like to build several bookcases that are different heights and widths. All will be 12 inches in depth. The bookcases will have three shelves, in addition to the bottom and the top. Write a solution to print the number of feet of 12 inches wide boards that will Joe needs to complete a bookcase, given the height and width.

**Pseudo Code:**

Begin

Declare Height, Width, Horizontal Boards, Vertical Boards, Total Boards

Set Depth in inch = 12, Shelves Number = 3

Input Height, Width

Vertical Boards = 2 \* (Height + Depth)

Horizontal Boards = 2 \* (Width + Depth)

Total Boards = Vertical Boards + Horizontal Boards + Shelf Boards

Convert to feet by dividing with 12

Output Total Boards

End

**FLOWCHART:**

Declare Variables: Height, Width, Horizontal Boards, Vertical Boards, Total Boards

Set: Depth = 12 inches , Shelves Number = 3

Input Height, Width

Vertical Boards = 2 \* (Height + Depth)

Horizontal Boards = 2 \* (Width + Depth)

Horizontal Boards = 2 \* (Width + Depth)

Total Boards = Vertical Boards + Horizontal Boards + Shelves

Convert Total Boards to feet by dividing with 12

Output Total Boards

1. 1. Begin
2. 2. Input height of bookcase in inches = height
3. 3. Input width of bookcase in inches = width
4. 4. Depth of bookcase = 12 inches
5. 5. number of shelves = 3
6. 6. Calculate the number of vertical boards needed for the sides.
7. Vertical boards = 2 \* (height + depth)
8. 7. Calculate the number of horizontal boards needed for the top and bottom.
9. Horizontal boards = 2 \* (width + depth)
10. 8. Calculate the total number of 12-inch-wide boards needed.
11. Total boards = vertical boards + horizontal boards + shelf board
12. 9. Convert the total boards to feet by dividing by 12.
13. 10.Output the number of feet of 12-inch-wide boards needed.
14. 11.End
15. 1. Begin
16. 2. Input height of bookcase in inches = height
17. 3. Input width of bookcase in inches = width
18. 4. Depth of bookcase = 12 inches
19. 5. number of shelves = 3
20. 6. Calculate the number of vertical boards needed for the sides.
21. Vertical boards = 2 \* (height + depth)
22. 7. Calculate the number of horizontal boards needed for the top and bottom.
23. Horizontal boards = 2 \* (width + depth)
24. 8. Calculate the total number of 12-inch-wide boards needed.
25. Total boards = vertical boards + horizontal boards + shelf board
26. 9. Convert the total boards to feet by dividing by 12.
27. 10.Output the number of feet of 12-inch-wide boards needed.
28. 11.End
29. 1. Begin
30. 2. Input height of bookcase in inches = height
31. 3. Input width of bookcase in inches = width
32. 4. Depth of bookcase = 12 inches
33. 5. number of shelves = 3
34. 6. Calculate the number of vertical boards needed for the sides.
35. Vertical boards = 2 \* (height + depth)
36. 7. Calculate the number of horizontal boards needed for the top and bottom.
37. Horizontal boards = 2 \* (width + depth)
38. 8. Calculate the total number of 12-inch-wide boards needed.
39. Total boards = vertical boards + horizontal boards + shelf board
40. 9. Convert the total boards to feet by dividing by 12.
41. 10.Output the number of feet of 12-inch-wide boards needed
42. . Begin
43. 2. Input number of people at the meeting = people count
44. 3. Input number of pages in the report = report pages
45. 4. Number of extra copies = 5
46. 5. Number of sheets per ream = 500
47. 6. Calculate the total number of copies needed
48. Total copies = people count + extra copies
49. 7. Calculate the total number of pages needed
50. Total copies = total copies \* report pages
51. 8. Calculate the number of reams needed
52. Reams needed = total pages / sheets per ream
53. 9. Output reams needed
54. 1