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WORKSHEET 2 – TESTING (Tiles)

1. Original code:

[Copy and paste your original code from Moodle into this box. Do not change it.]

```
#24/02/2026 Worksheet 2
height = float(input("Enter your height in cm: "))
width = float(input("Enter your width in cm: "))
total = height * width // 400
print(total)
```

#Not done

2. Code Testing

For each test below (i – vii), run your code and enter the values provided. Present a screenshot of the of what happened when the programme ran. Did the programme behave correctly or did it do something unexpected, and if so, why?

Input:

- i. Enter dimensions of wall: Width 40 Length 45
- ii. Enter dimensions of wall: Width 100000 Length 200000
- iii. Enter dimensions of wall: Width -16 Length -20

Logic:

- iv. Enter dimensions of wall: Width 80 Length 80. The result should be 16 tiles
- v. Enter dimension of wall: Width 40 Length 45. The result should be 6 tiles
- vi. Enter dimensions of wall: Width 85 Length 90. The result should be 25 tiles.
- vii. Enter dimensions of wall: Width 15 Length 15. The result should be 1 tile.

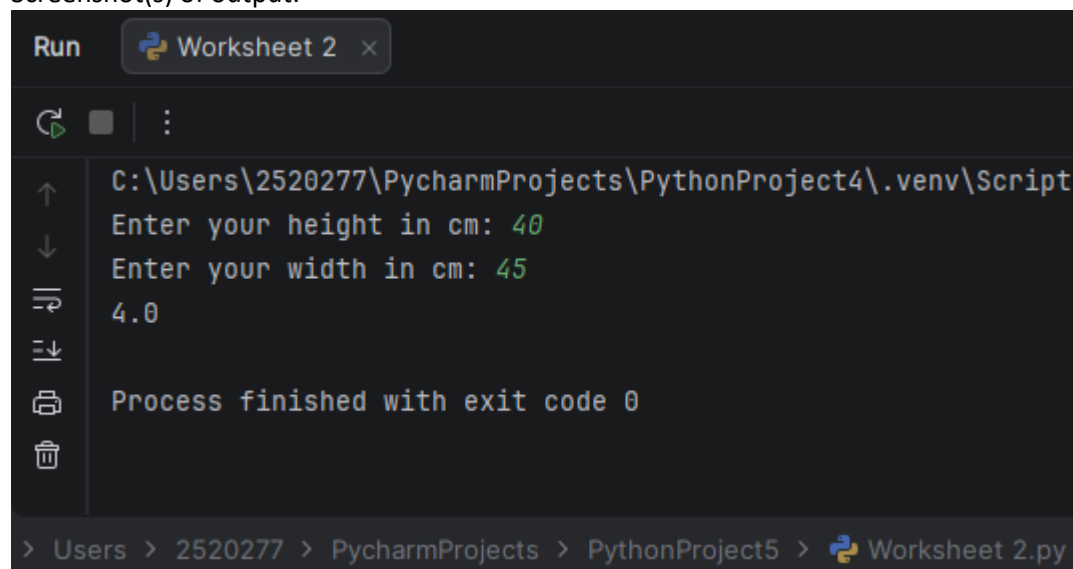
Note: If you decided to include logic within your program to allow a tile to be cut such that 2 pieces can be used from the same tile where possible (therefore reducing the total number of tiles required), your results may differ from the above. In this case, explain your logic as part of your answer. If you did not, consider adding this logic to your final code.

Fill in a box for each test above. You should present 7 separate boxes, 1 for each test. (Note: the first box is provided as a template)

Test i:

Input i. - Enter dimensions: Width 40 Length 45

Screenshot(s) of output:



```
Run Worksheet 2 x
C:\Users\2520277\PycharmProjects\PythonProject4\.venv\Script
Enter your height in cm: 40
Enter your width in cm: 45
4.0
Process finished with exit code 0
> Users > 2520277 > PycharmProjects > PythonProject5 > Worksheet 2.py
```

Result: Did the programme behave as expected ie syntactically and logically correct?

NO

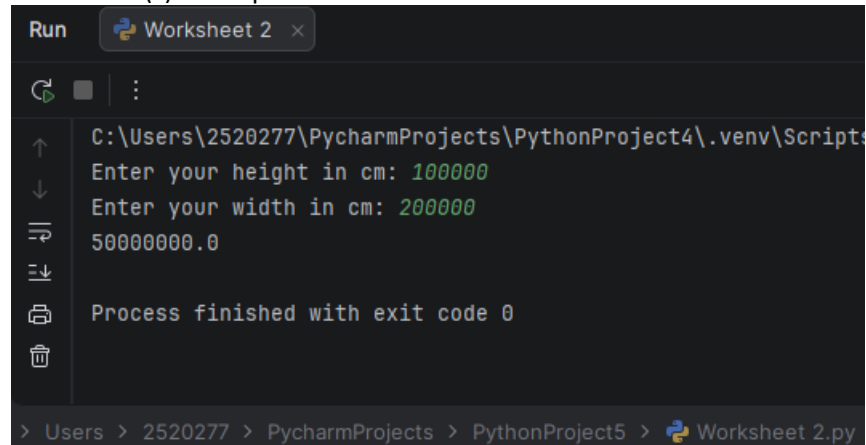
The program ran without crashing, but it printed 4.0 tiles. This was not logically correct because a wall of 40cm by 45cm needs 6 tiles, not 4. The code only divides the total area by 400 and does not round up the number of tiles needed for each dimension.

Continue the rest of the tests below. (Copy and paste a box for each one)

Test:

Test ii. Enter dimensions: Width 100000 Length 200000

Screenshot(s) of output:

A screenshot of the PyCharm Run console window. The title bar shows 'Run' and 'Worksheet 2'. The console output shows the following: 'Enter your height in cm: 100000', 'Enter your width in cm: 200000', and '50000000.0'. At the bottom, it says 'Process finished with exit code 0'. The breadcrumb at the bottom reads '> Users > 2520277 > PycharmProjects > PythonProject5 > Worksheet 2.py'.

Result: Did the programme behave as expected ie syntactically and logically correct?

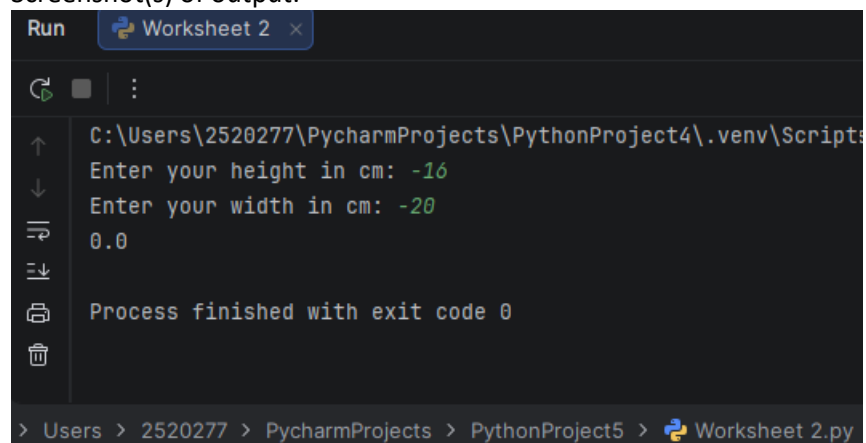
NO

The program accepted the very large wall dimensions and printed 50000000.0 tiles. It did not crash, so it was syntactically correct, but it was not logically correct because unrealistic dimensions should have been rejected using validation. The current code does not check whether the entered wall size is sensible.

Test:

test iii: -16 × -20

Screenshot(s) of output:

A screenshot of the PyCharm Run console window. The title bar shows 'Run' and 'Worksheet 2'. The console output shows the following: 'Enter your height in cm: -16', 'Enter your width in cm: -20', and '0.0'. At the bottom, it says 'Process finished with exit code 0'. The breadcrumb at the bottom reads '> Users > 2520277 > PycharmProjects > PythonProject5 > Worksheet 2.py'.

Result: Did the programme behave as expected ie syntactically and logically correct?

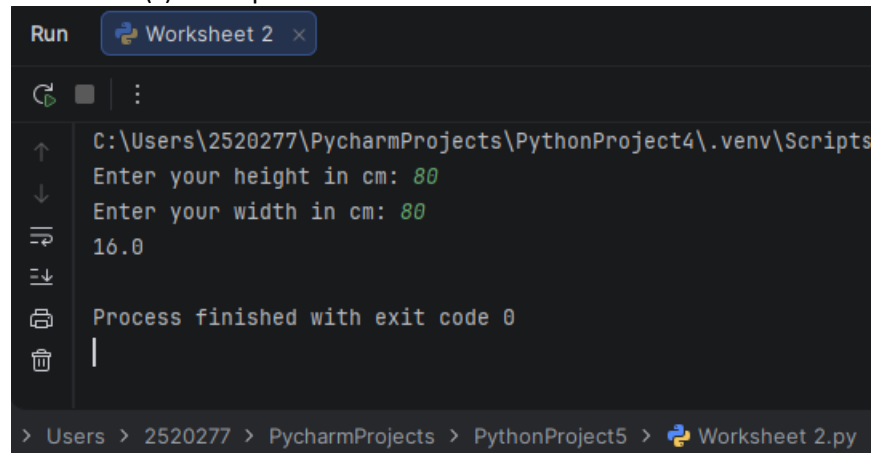
NO

The program accepted negative wall dimensions and printed 0.0 tiles. It did not crash, but it was not logically correct because wall dimensions cannot be negative and should have been rejected. The current code has no validation to prevent negative values.

Test:

Test iv. Enter dimensions: Width 80 Length 80

Screenshot(s) of output:



```
Run Worksheet 2 x
C:\Users\2520277\PycharmProjects\PythonProject4\.venv\Scripts
Enter your height in cm: 80
Enter your width in cm: 80
16.0
Process finished with exit code 0
> Users > 2520277 > PycharmProjects > PythonProject5 > Worksheet 2.py
```

Result: Did the programme behave as expected ie syntactically and logically correct?

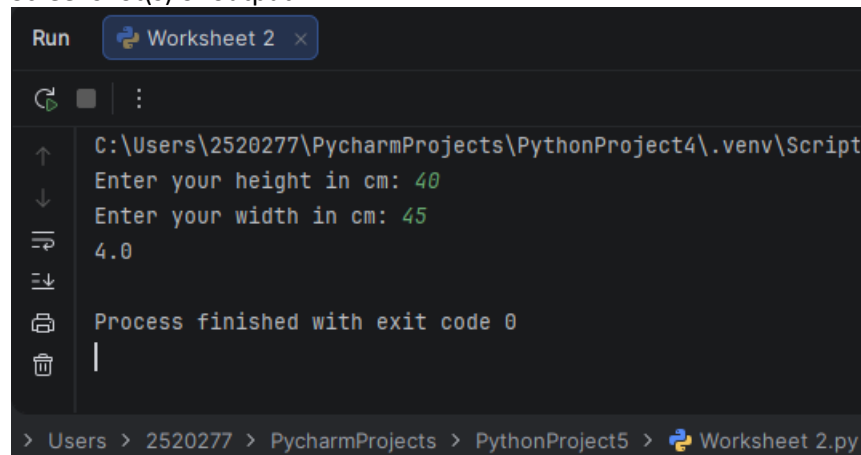
YES

The program accepted the values and printed 16.0. This was correct because a wall measuring 80cm by 80cm needs 16 tiles of 20cm by 20cm. The program behaved as expected for this test case.

Test:

Test v. Enter dimensions: Width 40 Length 45

Screenshot(s) of output:



```
Run Worksheet 2 x
C:\Users\2520277\PycharmProjects\PythonProject4\.venv\Scripts
Enter your height in cm: 40
Enter your width in cm: 45
4.0
Process finished with exit code 0
> Users > 2520277 > PycharmProjects > PythonProject5 > Worksheet 2.py
```

Result: Did the programme behave as expected ie syntactically and logically correct?

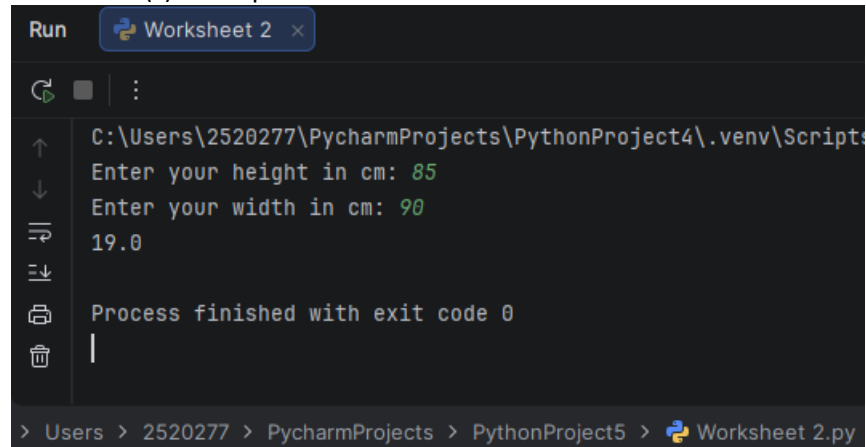
NO

The program ran without crashing, but it printed 4.0 instead of 6. This was not logically correct because a wall of 40 cm by 45 cm needs 6 tiles. The code only divides the total area by 400 and does not round up the number of tiles needed in each direction.

Test:

Test vi. Enter dimensions: Width 85 Length 90

Screenshot(s) of output:



```
Run Worksheet 2 x
C:\Users\2520277\PycharmProjects\PythonProject4\.venv\Scripts
Enter your height in cm: 85
Enter your width in cm: 90
19.0
Process finished with exit code 0
```

Result: Did the programme behave as expected ie syntactically and logically correct?

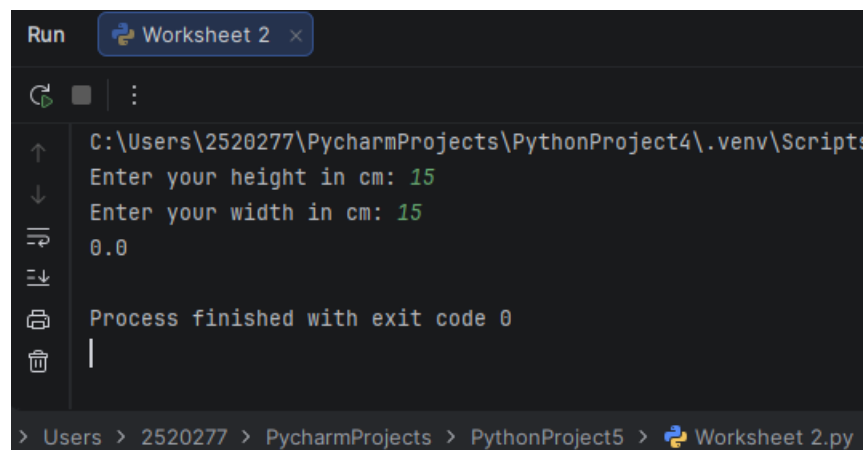
NO

The program ran without crashing, but it printed 19.0 instead of 25. This was not logically correct because a wall measuring 85 cm by 90 cm needs 25 tiles. The code only divides the total area by 400 and does not round up the number of tiles needed across and down

Test:

Test vii. Enter dimensions: Width 15 Length 15

Screenshot(s) of output:



```
Run Worksheet 2 x
C:\Users\2520277\PycharmProjects\PythonProject4\.venv\Scripts
Enter your height in cm: 15
Enter your width in cm: 15
0.0
Process finished with exit code 0
```

Result: Did the programme behave as expected ie syntactically and logically correct?

NO

The program ran without crashing, but it printed 0.0 instead of 1. This was not logically correct because a wall measuring 15 cm by 15 cm still needs 1 tile. The code only divides the total area by 400 and rounds down, so it incorrectly gives 0 when the wall is smaller than one full tile.

3. Consider the results of the above tests and revisit your code in order to solve any problems discovered at the testing phase. (Note: you may not be able to solve all of them, but solve as many as you can.)

Paste your revised code here:

[Copy and paste your revised code here – note, do not use a screenshot]

#24/02/2026 Worksheet 2 - revised code

```
height = float(input("Enter your height in cm: "))
width = float(input("Enter your width in cm: "))

#validation
while height <= 0 or width <= 0 or height > 1000 or width > 1000:
    print("Not valid")
    height = float(input("Enter your height in cm: "))
    width = float(input("Enter your width in cm: "))

#work out tiles down
tiles_down = height // 20
if height % 20 != 0:
    tiles_down = tiles_down + 1

#work out tiles across
tiles_across = width // 20
if width % 20 != 0:
    tiles_across = tiles_across + 1

#total tiles needed
total = tiles_down * tiles_across

print("Tiles needed:", int(total))
```