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Section: 17460
Assignment: Lab 2

Problem 2.1. Construct a statement that will be true if x is equal to 12 or -3.

Script:

```
x = input('Input an integer: ');
if x == 12 || x == -3
    disp('x is equal to 12 or -3')
else
    disp('x is not equal to 12 or -3')
end
```

Output(s):

```
>> ZhouLab2P1
Input an integer: -3
x is equal to 12 or -3
>> ZhouLab2P1
Input an integer: 12
x is equal to 12 or -3
>> ZhouLab2P1
Input an integer: 0
x is not equal to 12 or -3
```

Problem 2.2. Write a program to make a game where you roll a virtual six-sided dice with integer 1 to 6 on respective side and get the following outputs based on what you rolled. First, display the message 'You rolled a <number of roll>'. Furthermore, if it is a 6, display the message 'Congrats!'. If it is a 5, display the message 'Close!'. If you roll anything else besides 5 or 6, display the message 'Please try again'.

Hint: Look into the *rand*. Divide the interval (0,1) into six sub-intervals. Please do NOT use the build in Matlab command *randi*. We want you to actually use the if branching in this problem.

Script:

```
Dice = rand;
if 0 < Dice < 1/6
    Dice = 1;
elseif 1/6 < Dice < 2/6
    Dice = 2;
elseif 2/6 < Dice < 3/6
    Dice = 3;
elseif 3/6 < Dice < 4/6
    Dice = 4;
elseif 4/6 < Dice < 5/6
    Dice = 5;
elseif 5/6 < Dice < 1
    Dice = 6;
else
    disp('Invalid Roll. Please try again.')
```

```
    % to keep probability fair, all the other dice rolls do not include
    % the boundary condition values
    return
end

disp(['You rolled a ', num2str(Dice), '.'])

if Dice == 6
    disp('Congrats!')
elseif Dice == 5
    disp('Close.')
else
    disp('Please try again.')
end
```

Output(s):

```
>> ZhouLab2P2
You rolled a 6.
Congrats!
>> ZhouLab2P2
Invalid Roll. Please try again.
>> ZhouLab2P2
You rolled a 2.
Please try again.
>> ZhouLab2P2
You rolled a 5.
Close.
>> ZhouLab2P2
You rolled a 3.
Please try again.
```

Problem 2.3 Write a program to add all even numbers between 1 and 100. Hint: look into the mod function.

Script:

```
SumOfEven = 0;

for i = 0:100
    if mod(i,2) == 0
        SumOfEven = SumOfEven + i;
    end
end

disp(['The sum of all even numbers between 1 and 100 is ',
num2str(SumOfEven)])
```

Output:

```
>> ZhouLab2P3
The sum of all even numbers between 1 and 100 is 2550
```
