Problem 10. Determine whether a vector is monotonically increasing

Return true if the elements of the input vector increase monotonically (i.e. each element is larger than the previous). Return false otherwise.

Examples:

```
% Input  x = [-3 0 7]
% Output tf is true
%
% Input  x = [2 2]
% Output tf is false
```

since the first person will have $0.25 and the second person will have only $0.05.

Scratch Pad

```
x = [-3 0 7]
```

```
x = 1x3
     -3    0    7
```

```
mono_increase(x)
```

```
ans = logical
    1
```

```
x = [2 2]
```

```
x = 1x2
     2    2
```

```
mono_increase(x)
```

```
ans = logical
    0
```

```
x = [1, 2, 2, 3, 5, 5, 7];
mono_increase(x)
```

```
ans = logical
    0
```

Solution

```
function tf = mono_increase(x)
    a = x(1:end - 1);
    b = x(2:end);
```

```matlab
    % get the difference between each two consecutive terms
    c = b - a;
    % Check if there are any non-positive differences
    if any(c <= 0)
        tf = false;
    else
        tf = true;
    end
end
```

% get the difference between each two consecutive terms
c = b - a;
% Check if there are any non-positive differences
if any(c <= 0)