

ME 1020 Engineering Programming with MATLAB

Problem 4.16:

16. Write a script file using conditional statements to evaluate the following function, assuming that the scalar variable x has a value. The function is $y = e^{x+1}$ for $x < -1$, $y = 2 + \cos(\pi x)$ for $-1 \leq x < 5$, and $y = 10(x - 5) + 1$ for $x \geq 5$. Use your file to evaluate y for $x = -5$, $x = 3$, and $x = 15$, and check the results by hand.

```
% Problem 4.16
clear
clc
disp('Problem 4.16: Scott Thomas')

x = -5

if x < (-1)
    y = exp(x+1)
elseif x >= -1 & x < 5
    y = 2 + cos(pi*x)
else
    y = 10*(x - 5) + 1
end
```

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```
x =
    -5

y =
    0.0183
```

```
% Problem 4.16
clear
clc
disp('Problem 4.16: Scott Thomas')

x = 3

if x < (-1)
    y = exp(x+1)
elseif x >= -1 & x < 5
    y = 2 + cos(pi*x)
else
    y = 10*(x - 5) + 1
end
```

Problem 4.16: Scott Thomas

x =

3

y =

1

```
% Problem 4.16
clear
clc
disp('Problem 4.16: Scott Thomas')

x = 15

if x < (-1)
    y = exp(x+1)
elseif x >= -1 & x < 5
    y = 2 + cos(pi*x)
else
    y = 10*(x - 5) + 1
end
```

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x =

15

y =

101