Banner Printing Algorithm

Outputs: (text description of what the algorithm will output)

—A printed banner with a welcome message followed by a random number
(generated by the program)
—example:
```
**************************************************
! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !
**************************************************
 Welcome to week 3 lab — your lucky number is 13
**************************************************
! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !
**************************************************
```

Relevant Constants and Formulas:
—The width of a banner is 50 characters

Main Algorithm (numbered steps)

1. Generate a random number between 0 and 29
2. Print the top line of the banner
3. Print a welcome message that includes the random number
4. Print the bottom line of the banner

Step Refinements (provide a refinement for each numbered step that has
multiple sub—steps)

Step 2 refinement
2.1 Print a row of asterisks
2.2 Print exclamation points in every other position on the second
row
2.3 Print a row of asterisks

Step 4 refinement
4.1 Print a row of asterisks
4.2 Print exclamation points in every other position on the second
row
4.3 Print a row of asterisks