50 Java Pattern Problems

1. (Easy) Left Triangle

```
        *
       * *
      * * *
     * * * *
    * * * * *
```

*Hint: 1 loop for rows, 1 for printing * from 1 to i*

2. (Easy) Right Triangle

```
        *
       * *
      * * *
     * * * *
    * * * * *
```

Hint: First print n-i spaces then i stars

3. (Easy) Square

```
    * * * * *
    * * * * *
    * * * * *
    * * * * *
    * * * * *
```

Hint: 2 nested loops for rows and columns

4. (Easy) Hollow Square

```
    * * * * *
    *       *
    *       *
    *       *
    * * * * *
```

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*Hint: Print * only on borders*

5. (Easy) Half Pyramid Numbers

```
          1
          12
          123
          1234
          12345
```

Hint: Numbers from 1 to i in each row

6. (Easy) Inverted Left Triangle

```
          * * * * *
          * * * *
          * * *
          * *
          *
```

Hint: Outer loop i=n to 1, inner j=1 to i

7. (Easy) Inverted Right Triangle

```
          * * * * *
          * * * *
          * * *
          * *
          *
```

Hint: Print i stars after n-i spaces

8. (Easy) Pyramid Star

```
          *
          * * *
          * * * * *
```

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```
      * * * * * *
    * * * * * * * *
```

*Hint: Space = n-i, Star = 2*i-1*

9. (Easy) Inverted Pyramid Star

```
* * * * * * * *
  * * * * * * *
    * * * * *
      * * *
        *
```
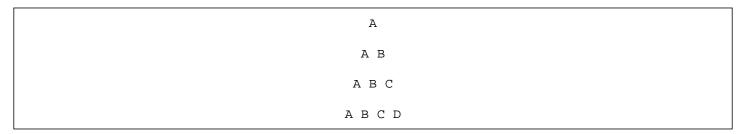
Hint: Space = i, Star = 2(n-i)-1*

10. (Easy) Floyd's Triangle

```
      1
     2 3
    4 5 6
   7 8 9 10
```

Hint: Continuous numbers row-wise

11. (Easy) Alphabet Triangle

```
      A
     A B
    A B C
   A B C D
```

Hint: Print chars from A to A+i-1

12. (Easy) Reverse Alphabet Triangle

```
      E
     D E
    C D E
```

```
                    B C D E

                    A B C D E
```

Hint: Start from 'E' and decrease

13. (Easy) Constant Number Triangle

```
                    1

                    2 2

                    3 3 3

                    4 4 4
```

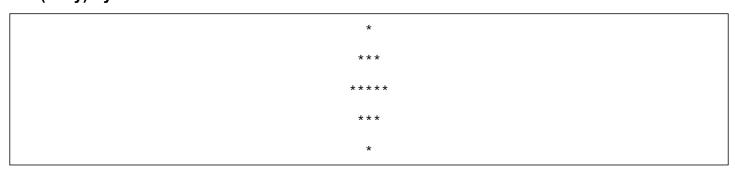*Hint: Same number in each row*

14. (Easy) Repeated Alphabets

```
                    A

                    B B

                    C C C

                    D D D D
```

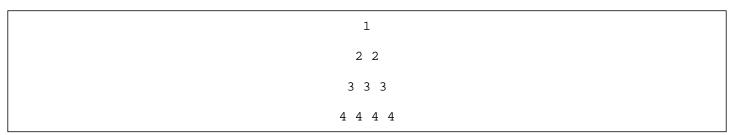*Hint: Same alphabet per row*

15. (Easy) Symmetric Star

```
                    *

                   ***

                  *****

                   ***

                    *
```

Hint: Triangle then inverted

16. (Easy) Binary Triangle

```
                    1

                   0 1

                  1 0 1
```

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```
0 1 0 1
```

Hint: Flip between 0 and 1

17. (Easy) Incrementing Triangle

```
      1
     2 2
    3 3 3
   4 4 4 4
```

Hint: i times i in each row

18. (Easy) Mirror Half Triangle

```
        *
       * *
      * * *
     * * * *
    * * * * *
```

Hint: Use spaces + stars

19. (Easy) Triangular Number Block

```
      1
     2 3
    4 5 6
   7 8 9 10
```

Hint: Incrementing numbers row-wise

20. (Easy) Simple Diamond

```
      *
     * * *
    * * * * *
     * * *
```

```
                                    *
```

Hint: Pyramid + Inverted pyramid

21. (Medium) Hollow Right Triangle

```
                 *
                 * *
                 *   *
                 *     *
                 * * * * *
```
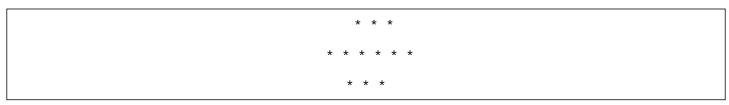
Hint: Star only at borders

22. (Medium) Hollow Pyramid

```
                   *
                  *   *
                 *     *
                *       *
               * * * * * * *
```

Hint: Star at start and end

23. (Medium) Number Pyramid

```
                    1
                   222
                  33333
                 4444444
                555555555
```

*Hint: i repeated 2*i-1 times*

24. (Medium) Palindrome Triangle

```
                    1
                   121
```

```
12321

1234321
```

Hint: First increasing then decreasing

25. (Medium) Zig-Zag Pattern

```
    *   *   *
*   *   *   *   *   *
    *   *   *
```
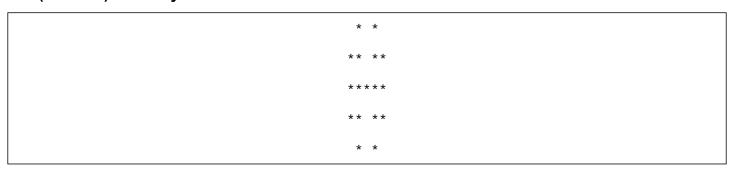
Hint: Based on (i+j)%4==0 or i==2 and j%2==0

26. (Medium) Hollow Diamond

```
    *
   * *
  *   *
   * *
    *
```
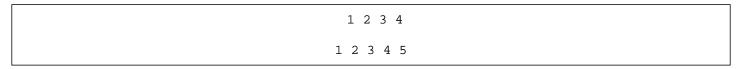
Hint: Star at borders, space inside

27. (Medium) Butterfly Pattern

```
*     *
**   **
*******
**   **
*     *
```

Hint: Opposite triangles with middle space

28. (Medium) Right Number Pyramid

```
    1
   1 2
  1 2 3
```

```
                    1 2 3 4

                  1 2 3 4 5
```

Hint: Space + 1 to i numbers

29. (Medium) Pascal's Triangle

```
                        1

                       1 1

                      1 2 1

                     1 3 3 1

                    1 4 6 4 1
```

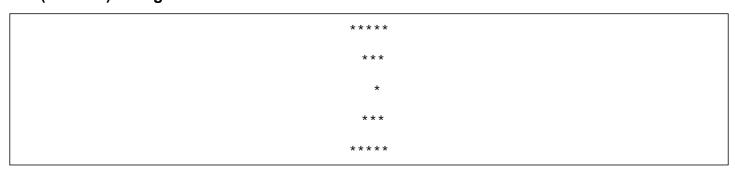*Hint: Use combinations formula*

30. (Medium) Alphabet Palindrome

```
                        A

                       ABA

                      ABCBA
```

Hint: Increment then decrement chars

31. (Medium) Hourglass

```
                    * * * * *

                      * * *

                        *

                      * * *

                    * * * * *
```

Hint: Inverted then normal

32. (Medium) Centered Binary Triangle

```
                        1

                       101

                      10101
```

```
1010101

101010101
```

Hint: Flip 0 and 1 in each row

33. (Medium) Incremental Alphabets
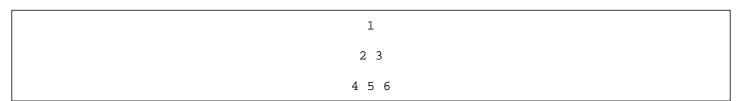
```
A B C

D E F

G H I
```

Hint: Chars continue across rows

34. (Medium) Downward Floyd

```
15 14 13

12 11 10

 9  8  7
```
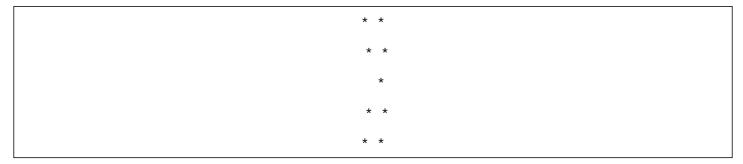
Hint: Reverse floyd's triangle

35. (Medium) Triangle of Sums

```
   1

  2 3

 4 5 6
```

Hint: Numbers increase row-wise

36. (Medium) Diamond of Numbers

```
  1

 121

12321

 121

  1
```

Hint: Number pyramid + inverted

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37. (Medium) Cross Pattern

```
    *   *
      *   *
        *
      *   *
    *   *
```

Hint: i==j and i+j==n+1

38. (Medium) Wave Pattern

```
    1 2 3
    6 5 4
    7 8 9
```
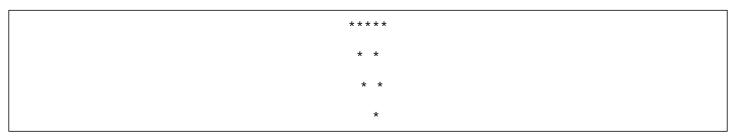
Hint: Alternate direction rows

39. (Medium) Alphabet Diamond

```
        A
      A B
    A B C
      A B
        A
```

Hint: Mirrored alphabets

40. (Medium) Hollow Inverted Pyramid

```
    * * * * *
      *   *
        *   *
          *
```

Hint: Star at edges, space inside

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41. (Hard) Concentric Rectangles

```
44444

43334

43234

43334

44444
```

Hint: min(row, col, n-row-1, n-col-1)

42. (Hard) Spiral Matrix
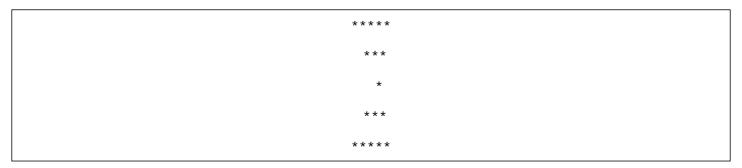
```
1 2 3

8 9 4

7 6 5
```

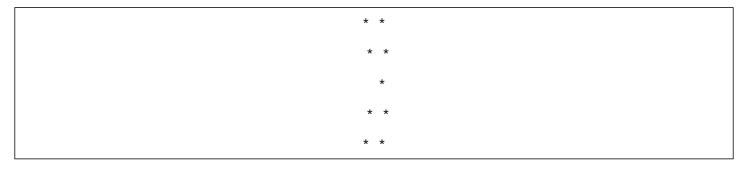*Hint: Use 4 pointers (top, bottom, left, right)*

43. (Hard) Snake Pattern

```
1 2 3

6 5 4

7 8 9
```

Hint: Even row reverse

44. (Hard) Sandglass Star

```
* * * * *

  * * *

   *

  * * *

* * * * *
```

Hint: Inverted + regular triangle

45. (Hard) X-Star Pattern

```
*   *

 *   *

   *

 *   *

*   *
```

Hint: Star at i==j and i+j==n-1

46. (Hard) Swastik Pattern

```
 *   *

*   *   *

*  *  *  *  *
```

Hint: Borders + middle

47. (Hard) Number Pyramid

```
     1

    2 3

   4 5 6

  7 8 9 10
```

Hint: Number fill by levels

48. (Hard) Arrow Pattern

```
    *

   **

  ***

 ****

*****

   *

   *
```

Hint: Triangle + line

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49. (Hard) Hollow Butterfly

```
 *   *
*   *   *
* * * * *
```

Hint: Star only at wings

50. (Hard) Triangle Center Number

```
    1
   212
  32123
```

Hint: Decrease to 1, then increase