

# Pseudocode

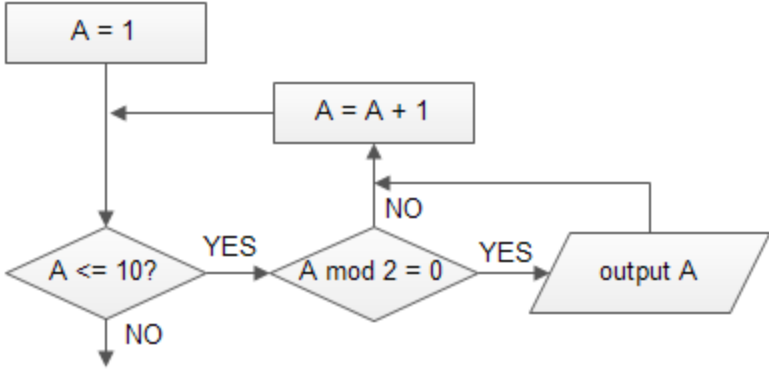
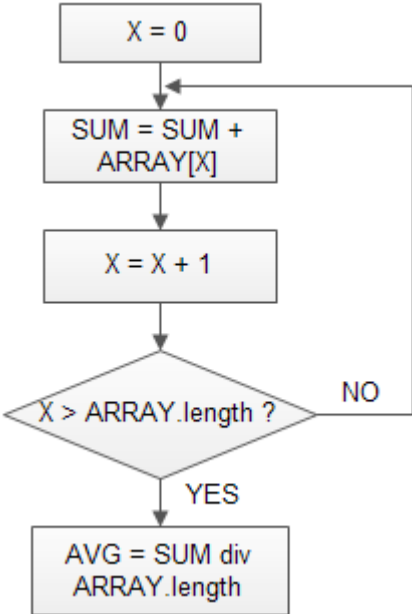
**Part A:** Convert the following pseudocode into Java source code.

|   | pseudocode  | Java |
|---|---|------|
| 1 | <pre>A = 5 B = 10 if A &lt; B then     output A, " is less than ", B else     output A, " is greater than ", B end if</pre> |      |
| 2 | <pre>STR1 = "red" STR2 = "blue" if NOT STR1 = STR2 then     STR1 = "blue" end if output STR1</pre>                          |      |
| 3 | <pre>COUNT = 0 loop while COUNT &lt; 20     output COUNT     COUNT = COUNT + 2 end loop</pre>                               |      |
| 4 | <pre>COUNT = 0 SUM = 0 loop until COUNT = 10     SUM = SUM + COUNT     COUNT = COUNT + 1 end loop</pre>                     |      |

|   |   |  |
|---|---|--|
| 5 | <pre> loop X from 1 to 10   if X mod 2 = 0 then     output "even"   else     output "odd"   end if end loop </pre>  |  |
| 6 | <pre> loop X from 0 to ARRAY.length - 1   if ARRAY[X] &gt; ARRAY[X + 1] then     TEMP = ARRAY[X + 1]     ARRAY[X + 1] = ARRAY[X]     ARRAY[X] = TEMP   end if end loop </pre> |  |

**Part B:** Convert the following flowcharts into pseudocode.

|   | flowchart   | pseudocode |
|---|---|------------|
| 7 | <pre> graph TD     A[A = 5] --&gt; B[B = 10]     B --&gt; C{if A &lt; B AND A mod 5 = 0 ?}     C -- YES --&gt; D[/output A/]     D --&gt; Exit(( ))     C -- NO --&gt; C </pre> |            |

|   |   |  |
|---|---|--|
| 8 |  <pre> graph TD     Start([A = 1]) --&gt; Cond1{A &lt;= 10?}     Cond1 -- NO --&gt; Exit1[ ]     Cond1 -- YES --&gt; Cond2{A mod 2 = 0}     Cond2 -- YES --&gt; Output[/output A/]     Cond2 -- NO --&gt; Inc[A = A + 1]     Inc --&gt; Cond1   </pre> |  |
| 9 |  <pre> graph TD     Start([X = 0]) --&gt; Sum[SUM = SUM + ARRAY[X]]     Sum --&gt; Inc[X = X + 1]     Inc --&gt; Cond{X &gt; ARRAY.length?}     Cond -- NO --&gt; Sum     Cond -- YES --&gt; Avg[AVG = SUM div ARRAY.length]   </pre>                 |  |

**Part C:** Write pseudocode for the following problems.

10. Determine if two numbers are equal. If they are equal print "same" otherwise print "different".

11. A method returns true if a given string contains the letter "a" otherwise it returns false.

12. A method returns true if a given number is prime otherwise it returns false. A number is prime if it is only divisible by itself and one.