# Exercise 9

Write a java program, Exercise9.java, that has the following methods:

1. Method that calculates the area of a pentagon and returns the value.

Return type: double

Name: pentagonArea

Parameters:

int n – the number of sides

double s – the side length

formula: area = (n \* s\*s)/(4\*Math.tan(Math.PI/n))

2. Method that determines if a number is a prime number. Returns true or false.

Return type: boolean

Name: isPrimeNumber

Parameters:

long n – the number

implementation pseudo-code:

If n is less than 2

return false

For i = 2 to (n/2) i++

If n % i is zero

return false

return true

3. Write a method that overloads the method in step 2. In an overloaded method everything is the same except the parameters. In step 2 the parameter type was a long. For this method the parameter type is an int. You can re-implement the same logic as step 2 or you can have this method call your method from step 2.

Parameters:

int n – the number

4. Main method pseudo-code

int n = 5;

double s = 34.0;

print “area = “+ Exercise9.pentagonArea(n, s)

for int j = 0 to 100 j++

println “is “+j+” prime? “+Exercise9.isPrimeNumber(j)