Algorithm 1 Calculate tangent Function using sin function

Require: value: $-\infty < x < \infty$
Ensure: $result = \tan(x)$

procedure CALCULATEPOWER(*base*, *exponent*)
    $power \leftarrow 1$
    for $i \leftarrow 1, exponent$ **do**
        $power \leftarrow power * base$
    end for
    return *power* ▷ It returns the base to the power exponent
end procedure

procedure CALCULATEFACTORIAL(*exponent*)
    $fact \leftarrow 1$
    for $i \leftarrow 1, exponent$ **do**
        $fact \leftarrow fact * i$
    end for
    return $fact$ ▷ It returns the factorial of exponent
end procedure

$n \leftarrow \frac{x.3.14}{180}$
$s \leftarrow 0$
$flag \leftarrow true$
$double \leftarrow output$
for $i \leftarrow 1, 99$ **do**
    if $i2 \leftarrow !0$ **then**
        if $flag \leftarrow true$ **then**
            $output \leftarrow output + \frac{power(n,i)}{factorial(i)}$
            $flag \leftarrow false$
        else
            $output \leftarrow output - \frac{power(n,i)}{factorial(i)}$
            $flag \leftarrow true$
        end if
    else
        return 0
    end if
end for
$s \leftarrow output$

$c \leftarrow \sqrt{1 - s^2}$
$t \leftarrow \frac{s}{c}$

Algorithm 2 Calculate tangent Function using sin and cos function

Require: value: $-\infty < x < \infty$
Ensure: $result = \tan(x)$

procedure CalculatePower(*base*, *exponent*)
    $power \leftarrow 1$
    for $i \leftarrow 1, exponent$ **do**
        $power \leftarrow power * base$
    end for
    return *power* ▷ It returns the base to the power exponent
end procedure

procedure CalculateFactorial(*exponent*)
    $fact \leftarrow 1$
    for $i \leftarrow 1, exponent$ **do**
        $fact \leftarrow fact * i$
    end for
    return $fact$ ▷ It returns the factorial of exponent
end procedure

procedure CalculateSin(n)
    $s \leftarrow 0$
    $flag \leftarrow true$
    $double \leftarrow output$
    for $i \leftarrow 1, 99$ **do**
        if $flag \leftarrow true$ **then**
            $output \leftarrow output + \frac{power(n,i)}{factorial(i)}$
            $flag \leftarrow false$
        else
            $output \leftarrow output - \frac{power(n,i)}{factorial(i)}$
            $flag \leftarrow true$
        end if
    end for
    $sin \leftarrow output$
    return s ▷ It returns the value of sin
end procedure

procedure CalculateCosin(n)
    $c \leftarrow 0$
    $flag \leftarrow true$
    $double \leftarrow output2$
    for $i \leftarrow 1, 99$ **do**
        if $i2 \leftarrow 0$ **then**
            if $flag \leftarrow true$ **then**
                $output2 \leftarrow output2 + \frac{power(n,i)}{factorial(i)}$
                $flag \leftarrow false$
            else
                $output2 \leftarrow output2 - \frac{power(n,i)}{factorial(i)}$
                $flag \leftarrow true$
            end if
        else
            return 0
        end if
    end for
    $c \leftarrow output2$
    return c ▷ It returns the value of cos
end procedure

$n \leftarrow \frac{x.3.14}{180}$
$t \leftarrow \frac{s}{c}$