interface Figure {  
  
 // Método sobrescrito  
 fun calcArea(): Double {  
 var area: Double = 0.0;  
 return area;  
 }  
}

class Square(val side: Double, name: String = "Quadrado") : Figure {  
  
 // Metodo exclusivo  
 fun calcPerimeter(): Double = side \* 4  
  
 override fun calcArea(): Double {  
 var area: Double = side \* side;  
 return area;  
 }  
}

open class Triangle(  
 val sideA: Double,  
 val sideB: Double,  
 val sideC: Double,  
 val base: Double,  
 val height: Double,  
 name: String = "Triângulo"  
) : Figure {  
  
  
 //Metodo exclusivo  
 fun typeTriangle(): String {  
 when {  
 //ajustar equilatero  
 sideA == sideB && sideB == sideC -> return "Equilatero"  
 sideA == sideB || sideB == sideC || sideC == sideA -> return "Isosceles"  
 else -> return "Escaleno"  
 }  
 }  
  
 override fun calcArea(): Double {  
 var area: Double = (base \* height) / 2  
 return area;  
 }  
}

open class Circle (var lightning: Double, name: String = "circumference") : Figure {  
  
 // Método exclusivo  
 fun calcCircle() = 2 \* Math.*PI* \* lightning;  
  
 override fun calcArea(): Double {  
 return Math.*PI* \* (lightning \* lightning)  
 }  
}

fun main(args: Array<String>) {  
 val figure: Figure  
 *println*("Digite 1 para área do quadrado, 2 para o tipo de triângulo, 3 para área da circuferencia.")  
  
 var question = *readLine*()?.*toInt*();  
  
 if (question === 1) {  
 // Quadrado  
 *println*("Insira o valor do lado do quadrado: ")  
  
 var side: Double = *readLine*()?.*toDoubleOrNull*() ?: 5.0  
 figure = Square(side)  
  
 *println*("A area do quadrado é: ${figure.calcArea()}")  
 } else if (question === 2) {  
 //Triângulo  
 *println*("Insira os lados do triângulo: ")  
  
 var side1: Double = *readLine*()?.*toDoubleOrNull*() ?: 5.0  
 var side2: Double = *readLine*()?.*toDoubleOrNull*() ?: 5.0  
 var side3: Double = *readLine*()?.*toDoubleOrNull*() ?: 5.0  
 var base: Double = 5.0  
 var height: Double = 5.0  
 figure = Triangle(side1,side2,side3,base,height)  
  
 if (figure is Triangle)  
 *println*("O tipo de triângulo é: ${figure.typeTriangle()}")  
 } else if (question === 3) {  
 // Circulo  
 *println*("Insira o raio da circunferencia: ")  
  
 var lightning: Double = *readLine*()?.*toDoubleOrNull*() ?: 5.0  
 figure = Circle(lightning);  
 if (figure is Circle)  
 *println*("A área da circunferencia é: ${figure.calcArea()}")  
 }  
}

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