// lib/roll\_calc.dart  
import 'package:flutter/material.dart';  
import 'dart:math';  
  
class RollCalcScreen extends StatefulWidget {  
 const RollCalcScreen({super.key});  
  
 @override  
 State<RollCalcScreen> createState() => \_RollCalcScreenState();  
}  
  
class \_RollCalcScreenState extends State<RollCalcScreen> {  
 final TextEditingController heightCtrl = TextEditingController();  
 final TextEditingController shaftCtrl = TextEditingController();  
 final TextEditingController thicknessCtrl = TextEditingController();  
  
 double? result;  
  
 void calculate() {  
 final h = double.tryParse(heightCtrl.text.replaceAll(',', '.')) ?? 0.0;  
 final d = double.tryParse(shaftCtrl.text.replaceAll(',', '.')) ?? 0.0;  
 final t = double.tryParse(thicknessCtrl.text.replaceAll(',', '.')) ?? 0.0;  
  
 if (h <= 0 || d <= 0 || t <= 0) {  
 ScaffoldMessenger.of(context).showSnackBar(const SnackBar(content: Text('لطفاً همه مقادیر را وارد کنید')));  
 return;  
 }  
  
 final D = sqrt(pow(d, 2) + (15.9 \* h \* t) / pi);  
 setState(() { result = D; });  
 }  
  
 @override  
 Widget build(BuildContext context) {  
 return Scaffold(  
 appBar: AppBar(title: const Text('محاسبه قطر رول')),  
 body: Padding(  
 padding: const EdgeInsets.all(12),  
 child: ListView(  
 children: [  
 TextField(controller: heightCtrl, keyboardType: TextInputType.number, decoration: const InputDecoration(labelText: 'ارتفاع (cm)')),  
 const SizedBox(height: 8),  
 TextField(controller: shaftCtrl, keyboardType: TextInputType.number, decoration: const InputDecoration(labelText: 'قطر شفت (cm)')),  
 const SizedBox(height: 8),  
 TextField(controller: thicknessCtrl, keyboardType: const TextInputType.numberWithOptions(decimal: true), decoration: const InputDecoration(labelText: 'ضخامت تیغه (cm)')),  
 const SizedBox(height: 12),  
 ElevatedButton(onPressed: calculate, child: const Text('محاسبه')),  
 const SizedBox(height: 16),  
 if (result != null)  
 Text('قطر رول ≈ ${result!.toStringAsFixed(1)} cm', style: const TextStyle(fontSize: 20)),  
 ],  
 ),  
 ),  
 );  
 }  
}