Variables and Inputs:

- points == 0
- {input} age
- {input} totChol
- {input} smoker
- {input} hdl
- {input} systolicBP
- {input} Treatment

Procedure:

1. Gather inputs
2. Add up the points for the person being in a certain age range based on the chart
    a. if 20 <= age <= 34: points -= 9
    b. …
    c. elif 50 <= age <= 54: points += 6
3. Add up the points for the person's cholesterol in relation to age
    a. if totChol >= 240 and age >= 70: points += 1
    b. …
    c. if 160 <= totChol <= 199 and 50 <= age <= 59: points +=2
4. Add up the points for the person's submitted HDL value:
    a. if hdl < 40: points += 2
    b. elif 40 <= hdl <= 49: points += 1
    c. elif hdl > 60: points -= 1
5. Determine if the person's systolicBP has been treated based on their response
6. Add up the points for the person's systolic BP in relation to the treatment
    a. if (120 <= systolicBP <= 129) and (treatment == True): points += 1
    b. ...
    c. elif (140 <= systolicBP <= 159) and (treatment == True): points += 2
7. Determine if the person smokes based on the response
8. Add up the points for if the person smokes in relation to their age
    a. if smoker == True and age >= 60: points += 1
    b. elif smoker == True and age >= 40: points += 5
9. Print the final message based on how many points have been accumulated
    a. if points <= 4: print("Your 10-Year risk: 1%")
    b. ...
    c. elif points <= 10: print("Your 10-Year risk: 6%")
    d. ...
    e. elif points <= 15: print("Your 10-Year risk: 20%")

f. ...

g. elif points >= 17: print("Your 10-Year risk is greater than 30%")

Test Cases:

Assume any value not noted in a test case to be == 0
{Input Numbers} → points

1. 5 ages
    a. age = 27 → 2
    b. age = 63 → 10
    c. age = 54 → 6
    d. age = 71 → 12
    e. age = 78 → 13
2. 5 cholesterols + age
    a. Test 1 → 4
        i. age = 34
        ii. cholesterol = 189
    b. Test 2 → 5
        i. age = 46
        ii. Cholesterol = 205
    c. Test 3 → 2
        i. age = 51
        ii. cholesterol = 171
    d. Test 4 → 9
        i. age = 21
        ii. cholesterol = 240
    e. Test 5 → 1
        i. Age = 72
        ii. Cholesterol = 300

3. 5 hdl's
    a. HDL = 53 → 0
    b. HDL = 70 → -1
    c. HDL = 44 → 1
    d. HDL = 39 → 2
    e. HDL = 48 → 1

4. 5 systolicBP + treatment

    a. Test 1 → 2
        i. systolicBP = 135
        ii. Treatment = YES

b. Test 2 → 1
    i. systolicBP = 141
    ii. Treatment = NO
c. Test 3 → 0
    i. systolicBP = 128
    ii. Treatment = NO
d. Test 4 → 3
    i. systolicBP = 166
    ii. Treatment = YES
e. Test 5 → 2
    i. systolicBP = 154
    ii. Treatment = YES

5. 5 smoker + age
    a. Test 1 → 8
        i. Smoker = YES
        ii. Age = 21
    b. Test 2 → 0
        i. Smoker = NO
        ii. Age = 44
    c. Test 3 → 1
        i. Smoker = Yes
        ii. Age = 73
    d. Test 4 → 0
        i. Smoker = NO
        ii. Age = 55
    e. Test 5 → 8
        i. Smoker = YES
        ii. Age = 38

6. cholesterols + hdl: If age = 35
    a. Test 1 → 6
        i. Cholesterols = 176
        ii. HDL = 32
    b. Test 2 → 6
        i. Cholesterols = 200
        ii. HDL = 69
    c. Test 3 → 11
        i. Cholesterols = 248
        ii. HDL = 33
    d. Test 4 → -1
        i. Cholesterols = 154
        ii. HDL = 98

e. Test 5 → 8
    i. Cholesterols = 225
    ii. HDL = 47

7. cholesterols + smokers: If age = 59
    a. Test 1 → 0
        i. Cholesterols = 153
        ii. Smoker = NO
    b. Test 2 → 6
        i. Cholesterols = 204
        ii. Smoker = YES
    c. Test 3 → 6
        i. Cholesterols = 215
        ii. Smoker = YES
    d. Test 4 → 4
        i. Cholesterols = 252
        ii. Smoker = NO
    e. Test 5 → 5
        i. Cholesterols = 176
        ii. Smoker = YES

8. cholesterols + systolicBP + smokers: If age = 21 and Treatment = YES
    a. Test 1 → 12
        i. Cholesterols = 166
        ii. systolicBP = 111
        iii. Smoker = YES
    b. Test 2 → 8
        i. Cholesterols = 201
        ii. SystolicBP = 127
        iii. Smoker = NO
    c. Test 3 → 17
        i. Cholesterols = 235
        ii. systolicBP = 142
        iii. Smoker = YES
    d. Test 4 → 10
        i. Cholesterols = 274
        ii. systolicBP = 127
        iii. Smoker = NO
    e. Test 5 → 19
        i. Cholesterol = 280
        ii. systolicBP = 100
        iii. Smoker = YES