Linear portion will be the strains from 0 to 0.01. The stress value is from 0 to 44. Young's Modulus is 4400.

Plastic portion has the strain from 0.01 to 0.06 and the stress stays 44.

The strain hardening portion has the strain from 0.06 to 0.18 and the stress from 44 to 60.

The necking portion has the strain from 0.18 to 0.26 and the stress from 60 to 50 where it then fails.

There needs to be just 1 variable to keep track of strain. They will creatively be named strain.

This program consists of 4 if statements to check which region the stress is in. First it will ask the user to input the strain value. Using this information it will then determine the stress using a formula for the specific region. All segments will be linear. Basically it will see if it fits between 0-0.01, 0.01-0.06, 0.06-0.18, 0.18-0.26. Then it will use 4 separate formulas to calculate the stress. For 0-0.01 it will multiply strain by 4400. For 0.01-0.06, it will set stress as 44. For 0.06-0.18, it will multiply strain by the ratio 16/0.12 and then add 36. For the last part it multiplies strain by -125 and adds 82.5 to it. After getting strain it prints it out unless the strain is not in the category. Then it prints out that the stress is undefined for that area.

Test cases: -100000, 0.000001, 0.04, 0.10, 0.22, 0.35.
The two cases at the very left and right are testing if it handles undefined stress. The ones in between test each region.
Test answers expected: undefined, 0.004399999999999999, 44, 49.333333333333336, 55.0, undefined.