MCG Coding Problem

Write an application, preferably using C#, to solve the following problem. Once complete, zip your solution files and send them to your designated MCG recruiter.

EXPECTATIONS

- Read from a text file to calculate the area of multiple shapes
- Sort the shapes from largest area to smallest and display the results
- Follow Object Oriented principles and best practices

DEFINITIONS

- Valid Shapes include: square, rectangle, circle, and triangle
- Input will be in the following format
  - Each line represents a new shape followed by its dimensions and is space delimited:
    - circle <diameter>
    - square <width>
    - rectangle <width><height>
    - triangle <width><height>
- Output will include the shape and the area
- If any dimension is zero or negative, then it should be ignored
- If any shape does not match one of the expected shapes, then it should be ignored
- Area calculations
  - Circle → π x (Diameter / 2) ^ 2
  - Square → Width ^ 2
  - Rectangle → Width x Height
  - Triangle → (Width x Height) / 2

EXAMPLE INPUT

rectangle 3 4
square 5
triangle 5 3
circle 6
circle -2
rectangle 2.5 7

EXPECTED RESULTS

circle 28.27
square 25
rectangle 17.5
rectangle 12
triangle 7.5