NOTE: When the problem says 'outputs the value of .....,' this means that the value should be returned as an output variable from the function, not that the function should display the value on the screen.

1) (2 pts) Write a MATLAB function that will take the dimaeter of a circle as input and outputs the area of the circle.

2) (3 pts) Suppose that the cost to ship a package consists of a \$2.00 base charge, plus an additional charge determined by the table below. Write a MATLAB function that will take the weight of the package

Weight (w, lbs)	Cost
$w < 1$	\$2.00
$1 \leq w < 2$	\$3.00
$2 \leq w < 4$	\$6.00
$4 \leq w < 10$	\$12.00
$10 \leq w < 15$	\$20.00
$w \geq 15$	Cannot be shipped

(w) as an input and outputs the shipping cost. In the event that the package cannot be shipped, the cost should be set to `NaN`.

3) (4 pts) Consider the piecewise function

$$f(x) = \begin{cases} \sin\left(x^2 + 3\right) & x \geq \pi \\ \cos\left(x^3 - 2\right) & x < \pi. \end{cases}$$

Write a MATLAB function that will take a column vector x as input and will output a column vector y where $y_i = f(x_i)$. You should do this using an appropriate `find` command instead of using a loop.