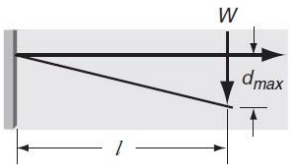
1. The maximum deflection at the end of a cantilevered beam, such as one used for a balcony, when a load is placed at the end of the beam is given by this formula:

$$d_{max} = \frac{W l^3}{3 E I} = \frac{4 W l^3}{E b h^3}$$

d_{max} is the maximum deflection (ft).
W is the load weight (lb). **l**
is the beam's length (ft).
E is the modulus of elasticity (lb/ft^2).
b is the beam's base (ft). **h** is the
beam's height (ft).
I is the second moment of inertia (ft^4).



Using the formula, write a function named **maxDeflect()** that accepts a beam's length, base, height, and the load placed on the beam as double-precision arguments, and then calculates and returns the beam's maximum deflection. Include the maxDeflect() function in a working program, and use your program to complete the following chart:

Material	Elasticity (lb/ft2)	Length (ft)	Height (ft)	Base (ft)	Weight (lb)	Maximum Deflection (in)
Aluminum	1.49e9	3	0.3	0.2	1000	
Pine wood	.187e9	3	0.3	0.2	1000	
Steel	3.9e9	3	0.3	0.2	1000	