Javascript Assignment 5

1) Write a JavaScript program to get the volume of a Cylinder, Sphere and

Cone with four decimal places using objects and classes.

Create classes for volumes for each geometric shape which returns the

output using the getVolume() method.

eg- to get volume of cylinder-

let obj= new Cylinder(radius,height);

obj.getVolume();

Formulas for volumes of the shapes-

1) Cylinder- Volume = πr2h

where r is the radius and h is the height of the cylinder.

2)Sphere- Volume= 4/3πr

3

where r is the radius

3) Cone- Volume= πr

2h/3

where r is the radius and h is the height of the cone.

Ans:

class Cylinder {

constructor(radius, height) {

this.radius = radius;

this.height = height;

}

getVolume() {

const volume = Math.PI \* this.radius \*\* 2 \* this.height;

return volume.toFixed(4);

}

}

class Sphere {

constructor(radius) {

this.radius = radius;

}

getVolume() {

const volume = (4 / 3) \* Math.PI \* this.radius \*\* 3;

return volume.toFixed(4);

}

}

class Cone {

constructor(radius, height) {

this.radius = radius;

this.height = height;

}

getVolume() {

const volume = (Math.PI \* this.radius \*\* 2 \* this.height) / 3;

return volume.toFixed(4);

}

}

// Example usage:

const cylinder = new Cylinder(3, 5);

console.log(`Cylinder Volume: ${cylinder.getVolume()}`);

const sphere = new Sphere(4);

console.log(`Sphere Volume: ${sphere.getVolume()}`);

const cone = new Cone(2, 6);

console.log(`Cone Volume: ${cone.getVolume()}`);