

Exercises:

1. The volume of a sphere with radius r is $(4/3)\pi r^3$. What is the volume of a sphere with radius 3? (392.6 is wrong!)

Python Code

```
r=3
```

```
pi= 3.1415
```

```
volume=(4.0/3)*pi*r**3
```

```
round(volume,1)
```

```
Out[4]: 113.1
```

2. Suppose the cover price of a book is \$16.95, but bookstores get a 40% discount. Shipping costs \$3 for the first copy and 75 cents for each additional copy. What is the total wholesale cost for 60 copies?

Python code

```
price=16.95
```

```
discount=0.4
```

```
cost=60*(1-discount)*price+3+0.75*59
```

```
round(cost,2)
```

```
Out[14]: 657.45
```

3. If I leave my house at 6:32 am and run 1 mile at an easy pace (8:15 per mile), then 3 miles at tempo (7:12 per mile) and 1 mile at easy pace again, what time do I get home for breakfast?

Python Code

```
start=6*60+32

time= 2*(8+15/60.0)+3*(7+12/60)

total=start+time

hour=int(total/60)

minutes= round((total%60),0)

hour

Out[20]: 7
```

Exercise 1: Use Python graphically to solve the supply and demand problem shown in Example 2 Section 1.2 of Lial. Compare your code and plot to the answer sheet.

Python Code

```
figure()
q= linspace(0,12,100)
price= 9-0.75*q
supply= 0.75*q
plot (q,price, 'r')
plot (q,supply, 'b')
legend (('price','supply'),loc=2)
title ('Breakeven Analysis')
show()
```

Exercise 2: Using Python as a calculator, calculate the correlation coefficient in Example 4 of Section 1.3 of Lial. Compare your code and computed result with the answer sheet.