BIS 420 PROGRAMMING FOR DATA SCIENCE

PRAJAKTA POHARE

CHAPTER 1 EXERCISE 2.3

ILLINOIS STATE UNIVERSITY

Practice using the Python interpreter as a calculator:

1. The volume of a sphere with radius r is 4 3 πr3. What is the volume of a sphere with radius 5?

Hint: 392.7 is wrong!

->

r = 5

pi = 3.14159

v = (4 / 3) * pi * (r ** 3)

print(v)

523.5983333333332

```
>>> r = 5
>>> pi = 3.14159
>>> v = (4 / 3) * pi * (r ** 3)
>>> print(v)
523.5983333333332
```

2. Suppose the cover price of a book is $24.95, 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?

->

book_price = 24.95 * 0.6

shipping_cost = 3 + (59 * 0.75)

total_cost = (book_price * 60) + shipping_cost

print(total_cost)

945.4499999999999

```
>>> book_price = 24.95 * 0.6
>>> shipping_cost = 3 + (59 * 0.75)
>>> total_cost = (book_price * 60) + shipping_cost
>>> print(total_cost)
945.4499999999999
```

3. If I leave my house at 6:52 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?

->

st = 6 * 60 + 52

ep = 8 * 60 + 15

tp = 7 * 60 + 12

ts = (ep * 2) + (tp * 3)

tm, rs = divmod(ts, 60)

etm = st + tm

eh, em = divmod(etm, 60)

print(f"{int(eh)}:{int(em):02}:{rs:02}")

7:30:06

```
945.4499999999999
>>> st = 6 * 60 + 52
>>> ep = 8 * 60 + 15
>>> tp = 7 * 60 + 12
>>>
>>> ts = (ep * 2) + (tp * 3)
>>> tm, rs = divmod(ts, 60)
>>> etm = st + tm
>>> eh, em = divmod(etm, 60)
>>> print(f"{int(eh)}:{int(em):02}:{rs:02}")
7:30:06
```