1. Complete the C program below so that it will use the formula \( V = \frac{4}{3} \pi r^3 \) to calculate the volume \( V \) of a sphere of radius \( r \). (Be careful in translating this formula into C.) Then print the value with 5 digits to the right of the decimal point.

```c
#include <stdio.h>
int main() {
    double V = 4.2;
    /* put answer below */
}
```

2. What values will be printed by the following program? (Show your work.)

```c
#include <stdio.h>
int main() {
    int a, b; /* remember: a and b are integers */
    a = 2 + 3*4;
    printf("a = %d\n", a);
    b = 2*3 + 15%4 + 1/4;
    printf("b = %d\n", b);
}
```

3. Consider the following C program:

```c
#include <stdio.h>
int main() {
    int income, tax;
    scanf("%d", &income);
    tax = 500;
    if (income < 8000) tax = 1000;
    else if (income <= 10000) tax = 1500;
    else if (income <= 12000) tax = 2000;
    else tax = 2500;
    printf("Income: %d, tax: %d\n", income, tax);
}
```

   a. What will this program print if we type “11000” for the input?

   b. One part of the program has no effect on the value printed, no matter what the value of `income` is. What is this part?

   c. Fill in values of `tax` for the given ranges at the right:

<table>
<thead>
<tr>
<th>income</th>
<th>tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 8000</td>
<td></td>
</tr>
<tr>
<td>8000 – 10000</td>
<td></td>
</tr>
<tr>
<td>10001 – 12000</td>
<td></td>
</tr>
<tr>
<td>&gt; 12000</td>
<td></td>
</tr>
</tbody>
</table>