1. (8 points)
Write down the printed output of this program. Mark your blank chars too.

WRITE YOUR OUTPUT BELOW HERE
ONLY THIS WILL BE GRADED

#include <stdio.h>

int main(void)
{
    float f;
    int a,i;
    a = 4;
    a = a - 1;
    printf ("P= %d\n", a);
    a += 2;
    a++;
    a = a % 2;
    printf ("Q= %d\n", a);
    i=2;
    f=13.0;
    printf ("R= %.2f\n", f/i);
    a=13;
    printf ("S= %d\n", a/i);
    return 0;
}
2. (12 points) Trace the following program:

```c
#include <stdio.h>

int main(void) {
    int a=5, b=3, c=4;
    a += 1;
    if (b > c)
        printf("a = %d\n", a+4);
    else
        printf("b = %d\n", b);
    b -= 2;
    if (a <= b)
        { printf("c = %d\n", a+c); }
    else
        { if (b > c)
            printf("d = %d\n", a+c); 
        else
            printf("f = %d\n", c); }
    return 0;
}
```

**WRITE YOUR FINAL OUTPUT HERE**

---

Outline 1

---

Outline 2

---

Outline 3

---

Outline 4

---
3. (20 points) Trace the following program:

ASSUME keyboard input IS: 4

<table>
<thead>
<tr>
<th>Line #</th>
<th>Prog</th>
<th>ENTER YOUR TRACE BELOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>#include &lt;stdio.h&gt;</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>int main(void)</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>{</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>int p, i, n;</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>p = 2; i = 3;</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>scanf(&quot;%d&quot;, &amp;n);</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>while (i &lt;= n)</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>{</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>if (i &lt; n)</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>printf(&quot;b = %d\n&quot;, p);</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>p = p + i * i;</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>i++;</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>}</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>for (i=6; i&lt;8; i++)</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>{</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>printf(&quot;c = %d\n&quot;, p+i);</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>}</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>return 0;</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>}</td>
<td></td>
</tr>
</tbody>
</table>

WRITE YOUR FINAL OUTPUT HERE

Outline 1

Outline 2

Outline 3

Outline 4

Outline 5

Outline 6
• 4. (10 points) Write a complete C program that uses a FOR-loop to read in 50 integers. For each of the 50 integers, if it is greater than 100, it should be added into a sum that was initialized to zero. After the loop, multiply the sum by 85 and then print out the answer. Assume correct input.

• 5. (10 points) Write a complete C program that uses a FOR-loop to read in 41 integers. For each of the 41 integers, first multiply the integer by itself; if the result obtained (i.e., the squared value) is greater than 500, the original integer (before it was squared) should be added into a sum that was initialized to zero. After the loop, multiply the sum by itself and then print out the answer as an integer. Assume correct input.