1. Define Amdahl’s Law. Using Amdahl’s Law, determine the overall speedup for an application if we can increase the performance of 60% of the application by a factor of 2 and another 20% of the application by a factor of 10.

2. Partitioning the following C code to a loosely-coupled coprocessor design. Using the profile information annotated within C code, determine which of the two innermost loops will result in the best increase in performance when partitioned to a hardware coprocessor. Partition the selected innermost loop to hardware and estimate the speedup of the partitioned design over software only execution.

```c
int main() {
    int n;
    int i,j,k;
    for (n = 0 ; n < LOOPS ; n++) {
        for(i=1;i<=SIZE;i++)
            c[i][j] = 0;
        for(j=1;j<=SIZE;j++)
            for(k=1;k<=SIZE;k++)
                c[i][j] += a[i][k] * b[k][j];
    }
    return 0;
}
```