

**Solution to Practice Problem 1:**

```

int main() {
    int a = 10;
    int b = 20;
    int c = 30;

    int* p1 = &a;
    int* p2 = &b;
    int* p3 = &c;

    printf("%i %i %i\n", *p1, *p2, *p3);

    *p3 = 66;

    p3 = p2;
    p2 = p1;

    *p1 = *p1 + 100;
    *p2 = *p2 + 400;
    *p3 = *p3 + 800;

    printf("%i %i %i\n", *p1, *p2, *p3);
    printf("%i %i %i\n", a, b, c);

    return EXIT_SUCCESS;
}

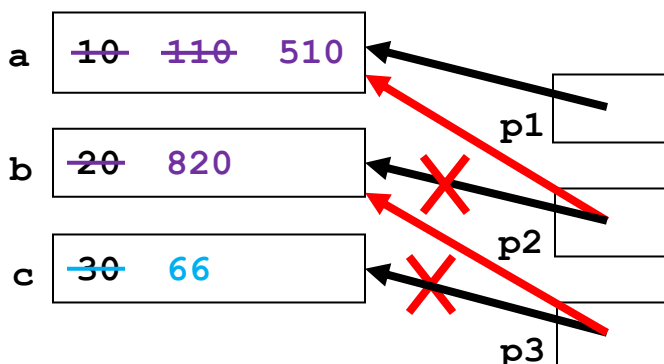
```

**Draw a box-and-pointer diagram** to indicate what the following snippets of code are doing. Also show what is output.

**Output:**

10 20 30  
510 510 820  
510 820 66

**Box and pointer diagram** (you can just cross out things to show how they change as the code executes):



**Black** shows the situation after the first `printf`.

**Blue** shows the effect of the `blue` statement in the code.

**Red** shows the effect of the `red` statements in the code: the arrows from **p3** and **p2** change.

**Purple** shows the effect of the `purple` statements in the code: **a** changes twice (because **a** is the pointee for both **p1** and **p2** at that point in the code) and **b** changes once (because **b** is the pointee for **p3** at that point in the code).