I **STRONGLY** ADVISE YOU TO DRAW THESE OUT LIKE I DO ON THE BOARD TO REALLY UNDERSTAND THE TOPIC.

Example 1-Using & and * operators (address and dereference)

```
computer$ gcc practice.c
computer$ ./a.out
Address of n: 0x7fff56611a7c, 0x7fff56611a7c
Value of n: 13, 13
```

```
#include <stdio.h>

int main(int argc, char**argv)
{
    int n=13;

    int *ptr_one=&n;

    printf("Address of n: %p, %p\n", &n, ptr_one); //using the & address operator and using a pointer
    printf("Value of n: %d, %d\n", n, *ptr_one); //using the * dereference operator

}
```

Example 2-Pointer to a pointer

```
computer$ gcc practice.c
computer$ ./a.out
Address of letter: 0x7fff55f37a7f
Address of ptr_let: 0x7fff55f37a70     Value of ptr_let: 0x7fff55f37a7f
Value of ptr_two: 0x7fff55f37a70
```

```
/*Notice: the value of ptr_let is the same as the address of letter and the value of ptr_two is the same as the address of ptr_let*/

#include <stdio.h>

int main(int argc, char**argv)
{
    char letter='c';

    char *ptr_let=&letter;
    char **ptr_two=&ptr_let;

    printf("Address of letter: %p\n", &letter);
    printf("Address of ptr_let: %p     Value of ptr_let: %p\n", &ptr_let, ptr_let);
    printf("Value of ptr_two: %p\n", ptr_two);

}
```

Example 3-Pointer to a pointer to a pointer

```
computer$ gcc practice.c
computer$ ./a.out
Value of num: 4.500000, 4.500000, 4.500000, 4.500000
```

```
#include <stdio.h>

int main(int argc, char**argv)
{
    float num=4.50;

    float *ptr_num=&num;
    float **ptr_two=&ptr_num;
    float ***ptr_three=&ptr_two; /*here, *** is letting us know the type of pointer*/

    printf("Value of num: %f, %f, %f, %f\n\n", num, *ptr_num, **ptr_two, ***ptr_three); /*dereferencing multiple times-here, * is an operator*/

}
```

Example 4-Pointer to pointer as a function parameter

```
computer$ gcc practice.c
computer$ ./a.out
Letter is: f
```

```
#include <stdio.h>
#include <string.h>

void example(char **example) /*the ** is letting us know it is a pointer to a pointer*/
{
    printf("Letter is: %c\n",**example); /*dereference operator twice*/
}


int main(int argc, char **argv)
{
    char letter='f';

    char *ptr_let=&letter;
    char **ptr_two=&ptr_let;

    example(ptr_two);
}
```