CS270 Worksheet – pointers   Name____

1.

```
int a;
int* p;
a = 2;
p = &a;
a = a + 1;
printf("%d", *p)
```

2.

```
int a;
int* p;
a = 2;
p = a;
a = a + 2;
printf("%d", *p);
```

3.

```
int a;
int b;
int* p;
p = &a;
*p = 4;
p = &b;
*p = 3;
printf("%d %d", a,b);
```

4.

```
int a;
int b;
int* p;
int* q;
a = 3;
p = &a;
q = p;
*q = *q + 5;
printf("%d", *p);
```

5.

```
int a;
int* p;
a = 4;
p = &a;
printf("%d", (*p)/a);
```

6.

```
void double_ref(int* p) {
    (*p) = (*p) * 2;
}
int main() {
    int a = 5;
    double_ref(&a);
    printf("%d", a);
}
```

7.

```
int main() {
   char s[] = "hello";
   char d = s[4];
   char *p = s;
   p[2] = '\0';
   printf("%d %c %s", d, *(s + 4), s);
}
```

8.

```
int a;
int* p;
a = 4;
p = &a;
printf("%d", (*p+1));
```

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9.

```
void test_p(int *x){
   printf("%d ", x[3]);
}

void test_a(int x[]){
   printf("%d ", *(x+3));
}

int main() {
   int *b = (int *)malloc(4 * sizeof(int));
   int a[4];
   a[3] = 5;
   *(b+3) = 7;
   *(&a[3]) = 6;
   test_p(a);
   test_a(a);
}
```

10.

```
int main() {
   int x;
   int *px = &x;
   int y[] = {3,5,1,8};
   *(y+3) = 7;
   x = *(y+2);
   printf("%d %d", *px, y[3]);
}
```

11.

```
void foo(int *x, int y){
   *x = y;
   y++;
   x++;
}

int main() {
   int x = 3;
   int y = 8;
   foo(&x, y);
   printf("%d %d", x, y);
}
```

12.

```
int * foo(int x){
   int y = x;
   return &y;
}
int* bar(int x){
   int *ret = (int *) malloc(1 *sizeof(int));
   *ret = x;
   return ret;
}

int main() {
   int x = 3;
   int y = 8;
   int *px = foo(x);
   int *py = bar(y);
   printf("%d %d", *px, *py);
}
// Possible issues with this code?
```

13

```
int main() {
   int x = 12;
   int y = 3;
   int *pi;
   double *pd;
   // fill in the blanks
   pi = _______ malloc(x * ______________);
   pd = _______ malloc(y * ______________);
}
```

14.

```
int main() {
   int x;
   int *p;
   int y[] = {3,4,7};
   p = y;
   x = *p++;
   printf("%d %d", x,*++p);
}
```