1. Given the following declarations

```
int x, y, *p, *q;
```

For each of the following code fragments, draw a diagram indicating the memory allocated for each variable and pointer, as well as where it points to. *(See Topic 2, slide 22.)* Then, determine which output each case will print out

```
p = &x;
x = 5;
cout << *p << endl;
```

```
x = 5;
p = &x;
cout << *p << endl;
```

```
p = &x;
*p = 8;
cout << *p << endl;
```

```
p = &x;
q = &y;
x = 100;
y = 200;
*q = *p;
cout << x << "␣" << y << endl;
cout << *p << "␣" << *q << endl;
```

```
p = &x;
q = &y;
x = 100;
y = 200;
q = p;
cout << x << "␣" << y << endl;
cout << *p << "␣" << *q << endl;
```

```
x = 5;
y = 10;
p = q = &y;
cout << *p << "␣" << *q << endl;
*p = 100;
*q = 1;
cout << x << "␣" << y << endl;
```

```
x = 5;
y = 10;
p = q = &x;
*p = *q = y;
cout << x << " " << y << endl;
```

```
double a = 100.0;
double* p1, *p2;
p1 = &a;
p2 = new double;
*p2 = a;

cout << "a = " << a << ", &a = " << &a << endl;
cout << "p1 = " << p1 << ", &p1 = " << &p1 << endl;
cout << "p2 = " << p2 << ", &p2 = " << &p2 << endl;

delete p2;
```