

**Question:** What are the outputs of each of the following code?

• *Case 1:*

```
1  double a = 100.0;
2  double* p1, *p2;
3  p1 = &a;
4  p2 = new double;
5  *p2 = a;
6
7  cout << "a_=" << a << ",_&a_=" << &a << endl;
8  cout << "p1_=" << p1 << ",_&p1_=" << &p1 << endl;
9  cout << "p2_=" << p2 << ",_&p2_=" << &p2 << endl;
10
11 delete p2;
```

• *Case 2:*

```
1  double a[5] = { 1.0, 2.0, 3.0, 4.0, 5.0 };
2  double* pa;
3  pa = a;
4
5  cout << "a_=" << a << endl;
6  cout << "&a[0]_=" << &a[0] << endl;
7  cout << "pa_=" << pa << endl;
8
9  pa += 2;
10 *pa = 40.0;
11
12 for (int i = 0; i < 5; ++i)
13     cout << "a[" << i << "]_=" << a[i] << ",_";
14 cout << endl;
```

• *Case 3:*

```
1  const int NUMS = 5;
2  int nums[NUMS] = {16, 54, 7, 43, -5};
3  int i, total = 0, *nPt;
4
5  nPt = nums;
6
7  // add your comment here
8  for (i = 0; i < NUMS; ++i)
9      total += *nPt++;
10
11 cout << "total_=" << total << endl;
```

- *Case 4:*

```

1      int a = 1, b = 2, c = 3, d = 4;
2      int* p[4];
3      p[0] = &a; p[1] = &b; p[2] = &c; p[3] = &d;
4
5      for (int i = 0; i < 4; ++i) {
6          cout << "p[" << i << "]=" << p[i] << ", ";
7          cout << "&p[" << i << "]=" << &p[i] << ", ";
8          cout << "*p[" << i << "]=" << *p[i] << endl;
9      }
10
11     *p[0] = 100; *p[2] = 50;
12     cout << "a=" << a << ", ";
13     cout << "b=" << b << ", ";
14     cout << "c=" << c << ", ";
15     cout << "d=" << d << endl;

```

- *Case 5:*

```

1      int v[4] = { 1, 2, 3, 4 };
2      int* p1 = v;
3      int(*p2)[4] = &v;
4
5      cout << "v=" << v << ", sizeof(v)=" << sizeof(v) << endl;
6      cout << "*v=" << *v << ", sizeof(*v)=" << sizeof(*v) << endl;
7      cout << "p1=" << p1 << ", sizeof(p1)=" << sizeof(p1) << endl;
8      cout << "*p1=" << *p1 << ", sizeof(*p1)=" << sizeof(*p1) << endl;
9      cout << "p2=" << p2 << ", sizeof(p2)=" << sizeof(p2) << endl;
10     cout << "*p2=" << *p2 << ", sizeof(*p2)=" << sizeof(*p2) << endl;
11
12     for (int i = 0; i < 4; ++i) {
13         cout << "*p1=" << *p1 << ", ";
14         p1++;
15     }
16     cout << endl;
17
18     for (int i = 0; i < 4; ++i)
19         cout << "(*p2)[" << i << "]=" << (*p2)[i] << ", ";
20     cout << endl;
21
22     p1 -= 2; *p1 = 50;
23     (*p2)[0] = 500;
24
25     for (int i = 0; i < 4; ++i)
26         cout << "v[" << i << "]=" << v[i] << ", ";
27     cout << endl;

```