

Heap Memory Puzzles

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I ILLINOIS

cpp-heapPuzzles/puzzle1.cpp

```
13 int main() {
14     int i = 2, j = 4, k = 8;
15     int *p = &i, *q = &j, *r = &k;
16
17     k = i;
18     cout << i << j << k << *p << *q << *r << endl;
19
20     p = q;
21     cout << i << j << k << *p << *q << *r << endl;
22
23     *q = *r;
24     cout << i << j << k << *p << *q << *r << endl;
25
26     return 0;
27 }
```

cpp-heapPuzzles/puzzle2.cpp

```
13 int main() {  
14     int *x = new int;  
15     int &y = *x;  
16     y = 4;  
17  
18     cout << &x << endl;  
19     cout << x << endl;  
20     cout << *x << endl;  
21  
22     cout << &y << endl;  
23     cout << y << endl;  
24     cout << *y << endl;  
25  
26     return 0;  
27 }
```

cpp-heapPuzzles/puzzle3.cpp

```
13 int main() {  
14     int *p, *q;  
15     p = new int;  
16     q = p;  
17     *q = 8;  
18     cout << *p << endl;  
19  
20     q = new int;  
21     *q = 9;  
22     cout << *p << endl;  
23     cout << *q << endl;  
24  
25     return 0;  
26 }
```

cpp-heapPuzzles/puzzle4.cpp

```
13 int main() {
14     int *x;
15     int size = 3;
16     x = new int[size];
17
18     for (int i = 0; i < size; i++) {
19         x[i] = i + 3;
20     }
21
22     delete[] x;
23 }
```