

632810

Which of the following assertions is *incorrect*?

- *a. A Python statement may return a value
- b. A Python expression may return a value
- c. A Python statement may produce a side effect
- d. A Python expression may produce a side effect
- e. None of the above (i.e., all are correct)
- f. "
- g. "
- h. "
- i. "
- j. "

General Feedback:

Basically, a statement in Python is a special kind of function that doesn't return a value. Statements are things like `print` (in Python 2.x but not Python 3) and `import`.

I think this is not a great question to put on a CS-1 exam beacuse it relies on terminology (statement, expression, side-effect) that doesn't really mean much until CS-2 or later.

634189

What is **not** a property of a max-heap?

- a. It is complete
- b. A node's value is less than or equal to that of its parent
- *c. Its values are sorted in when printed in level order
- d. Its root is the maximum element in the tree
- e.
- f. "
- g. "
- h. "
- i. "

General Feedback:

A max-heap need not be sorted.

633882

Barack Obama wants to know the most efficient way to sort a million 32-bit integers. He knows it's not bubble sort. What is?

- a. Heapsort

b. Insertion sort

c. Mergesort

*d. Radix sort

e. Quicksort

f. "

g. "

h. "

i. "

j. "

General Feedback:

Radix sort will be $O(n)$ and works nicely on integers; at such a large scale it will outperform the $O(n \lg n)$ sorting algorithms.

(question is a reference to http://www.youtube.com/watch?v=k4RRi_ntQc8)