Suppose $u$ and $v$ both denote sets in Python. Under what condition can we guarantee that $u - (u - v) == v$?

- The sets $u$ and $v$ should be disjoint.
- The set $v$ should be a subset of the set $u$.
- The set $u$ should be a subset of the set $v$.
- This is true for any $u$ and $v$.

No, the answer is incorrect.

Score: 0

Feedback:
From $u$ you take away all elements that are not in $v$ and you are left with $u \cap v$. Since $u \cap v = v$, we have $v$ is a subset of $u$.

Accepted Answers:
The set $v$ should be a subset of the set $u$.

2) Suppose $u$ and $v$ both denote sets in Python. Under what condition can we guarantee that $u|v == u^v$?
The sets $u$ and $v$ should be disjoint.

The set $u$ should be a subset of the set $v$.

The set $v$ should be a subset of the set $u$.

This is true for any $u$ and $v$.

No, the answer is incorrect.
Score: 0
Feedback: 
$u^v$ has all elements that are in exactly one of $u$ or $v$. This is the same as $u \cup v - u \cap v$. Since $u^v = u \cup v$, we have $u \cup v$ is empty, so $u$ and $v$ are disjoint.

Accepted Answers: The sets $u$ and $v$ should be disjoint.

3) Suppose we insert 97 into the max heap [98,67,89,38,42,54,89,17,25]. What is the resulting heap?

No, the answer is incorrect.
Score: 0
Feedback: 
The heap is

```
98
/   \
67   89
/     / \
38  42 54 89
/  
17  25
```

After inserting 97, we have

```
98
/   \
97   89
/     / \
38  67 54 89
/  
17  25 42
```

Accepted Answers: 
(Type: Regex Match) `[*][98][*][97][*][89][*][38][*][54][*][89][*][17][*][25][*][42][*]`

2.5 points

4) Suppose we apply delete_max() twice to the heap [100,97,93,38,67,54,93,17,25,42]. What is the resulting heap?

No, the answer is incorrect.
Score: 0
Feedback: 
The original heap is
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After one delete max, we have

```
  100
 /    \  
 97    93
 /    \  
38    67    54    93
 /      /      /     
17    25    42
```

After one more delete max, we have

```
  97
 /    \  
 67    93
 /    \    
38    42    54    93
 /      /     
17    25
```

Accepted Answers:
(Type: Regex Match) [[ ]*93[ ]*,[ ]*67[ ]*,[ ]*93[ ]*,[ ]*38[ ]*,[ ]*42[ ]*,[ ]*54[ ]*,[ ]*25[ ]*,[ ]*17[ ]*] [ ]*

2.5 points