

```
#!/usr/bin/python3
```

```
times = 80
```

```
print ("[1]:Set creation")
```

```
S = {1, 2, 3}
```

```
print ("S:", S)
```

```
print ("Set can contain objects of any immutable type")
```

```
S = {1, 3.14, "Hello", (1,2,3)}
```

```
print ("S:", S)
```

```
print ("-" * times)
```

```
print ("[2]:Converting set into list and tuples")
```

```
S = {1, 2, 3, 4, 5}
```

```
L = list (S)
```

```
T = tuple (S)
```

```
print ("S:", S, "L:", L, "T:", T)
```

```
print ("-" * times)
```

```
print ("[3]:Converting list and tuples into set")
```

```
L = [1, 2, 3, 4, 5]
```

```
T = (1.1, 2.2, 3.3, 4.4, 5.5)
```

```
S1 = set (L)
```

```
S2 = set (T)
```

```
print ("L:", L, "S1:", S1)
```

```
print ("T:", T, "S2:", S2)
```

```
print ("-" * times)
```

```
print ("[4]:Adding member to a set")
```

```
S = {1, 2, 3}
```

```
print ("Initial S:", S)
```

```
S.add (4)
```

```
print ("After S.add (4), S:", S)
```

```
L = [5, 6, 7, 8]
```

```
for x in L:
```

```
    S.add (x)
```

```
print ("S:",S)
```

```
print ("-" * times)
```

```
print ("[5]:Emptying the set")
```

```
S = {1, 2, 3, 4, 5}
```

```
print ("Initial S:", S)
```

```
S.clear ()
```

```
print ("After S.clear (), S:", S);
```

```
print ("-" * times)
```

```
print ("[6]:Popping an element")
```

```
S = {1, 2, 3, 4, 5}
```

```
print ("Initial S:", S)
```

```
S.pop ()
```

```
print ("After first S.pop (), S:", S)
```

```
S.pop ()
```

```
print ("After second S.pop (), S:", S)
S.pop ()
print ("After third S.pop (), S:", S)
print ("-" * times)

print ("[7]:Removing a particular element")
S = {1, 2, 3, 4, 5}
print ("Initial S:", S)
S.remove (3)
print ("After S.remove (3), S:", S)
S.remove (5)
print ("After S.remove (5), S:", S)
print ("-" * times)

print ("[8]:Duplicating a set")
S = {1, 2, 3, 4, 5}
S1 = S.copy ()
print ("Initial S:", S)
print ("After S1=S.copy (), S1:", S1)
print ("-" * times)

print ("[9]:Union of sets")
S1 = {1, 2, 3, 4}
S2 = {3, 4, 5, 6}
S = S1.union (S2)
print ("S1:", S1, "S2:", S2, "S=S1.union (S2):", S)
print ("-" * times)

print ("[10]:Union of sets and update")
S1 = {1, 2, 3, 4}
print ("Initial S1:", S1)
S2 = {3, 4, 5, 6}
print ("Initial S2:", S2)
S1.update (S2)
print ("After S1.update (S2), S1:", S1)
print ("-" * times)

print ("[11]:Intersection of sets")
S1 = {1, 2, 3, 4}
S2 = {3, 4, 5, 6}
S = S1.intersection (S2)
print ("S1:", S1, "S2:", S2, "S=S1.intersection(S2):", S)
print ("-" * times)

print ("[12]:Intersection of sets and update")
print ("S1:", S1)
S1 = {1, 2, 3, 4}
print ("S2:", S2)
S2 = {3, 4, 5, 6}
S1.intersection_update (S2)
print ("After S1.intersection_update (S2), S1:", S1)
print ("-" * times)
```

```
print ("[13]:Difference of sets")
S1 = {1, 2, 3, 4, 5}
S2 = {4, 5, 6, 7, 8}
S = S1.difference (S2)
print ("S1:", S1)
print ("S2:", S2)
print ("S = S1.difference (S2):", S)
print ("- " * times)

print ("[14]:Difference and update")
S1 = {1, 2, 3, 4, 5}
print ("S1:", S1)
S2 = {3, 4, 5, 6, 7}
print ("S2:", S2)
S1.difference_update (S2)
print ("S1.update(S2), S1:", S1)
print ("- " * times)

print ("[15]:Symmetric difference of sets")
S1 = {1, 2, 3, 4, 5}
S2 = {3, 4, 5, 6, 7}
S = S1.symmetric_difference (S2)
print ("S1:", S1)
print ("S2:", S2)
print ("S=S1.symmetric_difference (S2):", S)
print ("- " * times)

print ("[16]:Symmetric difference and update")
S1 = {1, 2, 3, 4, 5}
print ("S1:", S1)
S2 = {3, 4, 5, 6, 7}
print ("S2:", S2)
S1.symmetric_difference_update (S2)
print ("After S1.symmetric_difference_update(S2):", S1)
print ("- " * times)

print ("[17]:Checking for disjoint property")
S1 = {1, 2, 3, 4, 5}
S2 = {6, 7, 8, 9, 10}
S3 = {4, 5, 6, 7, 8}
print ("S1:", S1)
print ("S2:", S2)
print ("S3:", S3)
ans = S1.isdisjoint (S2)
print ("After ans = S1.isdisjoint (S2), ans:", ans)
ans = S1.isdisjoint (S3)
print ("After ans = S1.isdisjoint (S3), ans:", ans)
print ("- " * times)

print ("[18]:Checking for subset property")
S1 = {1, 2, 3, 4, 5}
```

```
S2 = {1, 2, 3}
S3 = {3, 4, 5, 6}
print ("S1:", S1)
print ("S2:", S2)
print ("S3:", S3)
ans = S2.issubset (S1)
print ("After ans = S2.issubset (S1), ans:", ans)
ans = S3.issubset (S1)
print ("After ans = S3.issubset (S1), ans:", ans)
print ("- " * times)

print ("[19]:Checking for superset property")
S1 = {1, 2, 3, 4, 5}
S2 = {1, 2, 3}
S3 = {3, 4, 5, 6}
print ("S1:", S1)
print ("S2:", S2)
print ("S3:", S3)
ans = S1.issuperset (S2)
print ("After ans = S1.issuperset (S2), ans:", ans)
ans = S1.issuperset (S3)
print ("After ans = S1.issuperset (S3), ans:", ans)
print ("- " * times)
```