TestNG Cheat Sheet

1. Basic Annotations

```
@BeforeSuite      - Runs before all tests in the suite
@AfterSuite       - Runs after all tests in the suite
@BeforeTest       - Runs before any test method in a <test>
@AfterTest        - Runs after all test methods in a <test>
@BeforeClass      - Runs before first method in the current class
@AfterClass       - Runs after all methods in the current class
@BeforeMethod     - Runs before each test method
@AfterMethod      - Runs after each test method
@Test             - Marks a method as a test method
```

2. Common @Test Attributes

```
@Test(priority = 1)                   - Sets test execution order
@Test(enabled = false)                - Disables a test
@Test(dependsOnMethods = {"loginTest"})   - Set dependency on other methods
@Test(groups = {"regression"})        - Assigns a test to groups
@Test(invocationCount = 5)            - Runs the test multiple times
@Test(timeOut = 2000)                 - Sets max execution time (ms)
@Test(expectedExceptions = Exception.class) - Handles expected exception
```

3. TestNG XML Structure

```xml
<suite name="MySuite">
  <test name="MyTest">
    <classes>
      <class name="com.example.MyTestClass"/>
    </classes>
  </test>
</suite>
```

4. Assertions

```
Assert.assertTrue(condition)
Assert.assertFalse(condition)
Assert.assertEquals(actual, expected)
Assert.assertNotEquals(actual, expected)
Assert.assertNull(object)
Assert.assertNotNull(object)
```

5. Grouping Tests

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```
@Test(groups = {"smoke"})
@Test(groups = {"regression"})

<groups>
  <run>
    <include name="smoke"/>
  </run>
</groups>
```

6. DataProvider

```
@DataProvider(name = "loginData")
public Object[][] getData() {
  return new Object[][] {
    {"user1", "pass1"},
    {"user2", "pass2"}
  };
}

@Test(dataProvider = "loginData")
public void loginTest(String user, String pass) {
  // test logic
}
```

7. Ignore Test

```
@Test(enabled = false)
public void skippedTest() {
  // This test won't run
}
```

8. Parallel Execution

```
<suite name="Suite" parallel="tests" thread-count="2">
  <test name="Test1">
    <classes><class name="TestClass1"/></classes>
  </test>
  <test name="Test2">
    <classes><class name="TestClass2"/></classes>
  </test>
</suite>
```

9. Maven Dependency

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```xml
<dependency>
  <groupId>org.testng</groupId>
  <artifactId>testng</artifactId>
  <version>7.9.0</version>
  <scope>test</scope>
</dependency>
```

10. Programmatic Suite Run

```java
TestNG testng = new TestNG();
testng.setTestSuites(Arrays.asList("testng.xml"));
testng.run();
```