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## Question: 1

In order to use a custom resource from another cookbook you must do which of the following:  
Choose the correct answer:

- A. Use `include_recipe` in your cookbook and specify the cookbook and recipe which contains the custom resource.
- B. Place the cookbook in the same directory as the original cookbook and include a recipe from the cookbook which contains the custom resource.
- C. Place a dependency on the cookbook that contains the resource you want to use.
- D. Use `include` in your cookbook and specify the cookbook and recipe which contains the custom resource.

**Answer: C**

Explanation:

A dependency must be added so that the cookbook which contains the custom resource is available on the chef-client.

## Question: 2

The cookbooks installed with berks are placed in which directory?  
Choose the correct answer:

- A. Cookbooks installed from berks are placed in the `~/berkshelf` directory.
- B. Cookbooks installed from berks are put in the `~/berks` directory.
- C. Cookbooks installed from berks are placed in the `cookbooks` directory.
- D. Cookbooks are only downloaded on the chef-client.

**Answer: A**

Explanation:

The `.berkshelf` directory will contain the cookbooks downloaded through berks.

## Question: 3

What is the primary purpose of suites in Test Kitchen?  
Choose the correct answer:

- A. The ability to run a single test kitchen instance.
- B. The ability to run one platform.
- C. The ability to run multiple verifiers.
- D. The ability to mock multiple tests on one or more platforms.

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**Answer: D**

Explanation:

Test Kitchen suites offer the ability to run multiple platform tests concurrently and make changes in each suite to mock up various test conditions or scenarios.

### Question: 4

When in your development process should you incorporate tests for your code?

Choose the correct answer:

- A. When foodcritic has no more warnings.
- B. After you have uploaded the code to a Chef server but before you increase the version number.
- C. As early as possible, even before you have written Chef code to accomplish a task.
- D. After you have working Chef code.

**Answer: C**

Explanation:

The test driven development model is predicated on creating tests first before you write any code.

### Question: 5

Ruby code which is inside of a `ruby_block` is run during which phase of a chef-client run?

Choose the correct answer:

- A. During the compile and convergence phases.
- B. During the compile phase.
- C. Only if the resource also contains a guard.
- D. During the execute (or converge) phase.

**Answer: D**

Explanation:

`ruby_blocks` run during the execute phase of the chef-client run.

### Question: 6

What is the resulting value for an attribute which is set in `attributes/default.rb` as `default['message'] = 'Hello'` and also in `recipies/default.rb` as `node.default['message'] = 'Goodbye'`?

Choose the correct answer:

- A. GoodbyeHello
- B. HelloGoodbye

- C. Hello
- D. Goodbye

**Answer: D**

## Question: 7

You have installed Test Kitchen and need to use a Docker driver; how can you install this driver?  
Choose the correct answer:

- A. chef gem install kitchen-docker or chef exec gem install kitchen-docker
- B. kitchen init --install-driver kitchen-docker
- C. kitchen driver --driver kitchen-docker
- D. kitchen driver install kitchen-docker

**Answer: A**

Explanation:

If you have the ChefDK Ruby set as your system Ruby, you can perform a chef gem install kitchen-docker. You can also run chef exec gem install kitchen-docker.

## Question: 8

What happens if you include\_recipe multiple times?  
Choose the correct answer:

- A. The cookbook will fail to run.
- B. You the last inclusion will update the resources and previous inclusions will be ignored.
- C. The first inclusion will update the resources and subsequent inclusions will be ignored.
- D. The recipe will be run multiple times.

**Answer: C**

Explanation:

No matter the number of inclusions, the first evaluation of a recipe is the one which matters.

## Question: 9

True or false, by default, you can use the Chef DSL resources in libraries?  
Choose the correct answer:

- A. True
- B. False

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**Answer: B**

Explanation:

You cannot by default use DSL resources in a Library.

### Question: 10

When is pure Ruby code executed during a chef-client run?

Choose the correct answer:

- A. The completion phase.
- B. The compile phase.
- C. Ruby code is never executed.
- D. The execution phase.

**Answer: B**

Explanation:

Ruby code is executed during the compile phase to facilitate building the resource list.

### Question: 11

How can you include the same text automatically in every cookbook you create?

Choose the correct answer:

- A. `chef generate cookbook -g /path/to/generator_cookbook`
- B. `chef generate --message "text"`
- C. Use an attribute
- D. `chef generate generator -g`

**Answer: A**

Explanation:

The use of a generator cookbook can be specified when generating a cookbook with the `-g` switch and the path to the generator cookbook.

### Question: 12

ChefSpec tests are located in which directory beneath the cookbook directory?

Choose the correct answer:

- A. `spec/unit/recipes`
- B. `spec/unit/test`
- C. `test/spec/recipes`
- D. `test/integration`

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Question: 13

How can you overwrite a frozen cookbook?  
Choose the correct

|                |
|----------------|
| <b>answer:</b> |
|----------------|

- A. knife cookbook upload my\_cookbook --overwrite
- B. knife cookbook upload my\_cookbook --freeze
- C. knife cookbook upload my\_cookbook --thaw
- D. knife cookbook upload my\_cookbook --force

Answer: D

Explanation:

Using the --force switch will force the cookbook to be uploaded if there is a conflict.

### Lab1. Development Environment Setup

Task:

1. Install the latest stable ChefDK.
2. Install Docker.
3. Configure Git.

Solution:

1. Install the latest stable ChefDK.

```
curl -s https://omnitruck.chef.io/install.sh | sudo bash -s -- -P chefdk  
echo 'eval "$(chef shell-init bash)"' >> ~/.bash_profile source ~/.bash_profile
```

2. Install Docker.

```
sudo yum install -y git yum-utils  
sudo yum-config-manager --add-repo \  
https://download.docker.com/linux/centos/docker-ce.repo  
sudo yum makecache fast  
sudo yum -y install docker-ce  
sudo systemctl enable docker  
sudo systemctl start docker  
sudo usermod -aG docker $USER  
sudo systemctl stop getty@tty1.service  
sudo systemctl mask getty@tty1.service  
logout
```

Log back in, the run:

```
docker network create --subnet=10.1.1.0/24 testnet  
gem install kitchen-docker
```

3. Configure Git.

```
git config --global user.name "Your Name"  
git config --global user.email "email@example.com"  
git config --global core.editor vim  
git config --global color.ui auto
```

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## Lab2. Generate with a Generator

In this lab, you will create a generator cookbook which can be used with Chef generator commands to produce defaults which match your requirements. This will help configure the environment and make it easier to work with cookbooks and cookbook components that you generate.

Create a generator beneath ~/generator called lcd\_origin

Edit ~/generator/lcd\_origin/templates/default/kitchen.yml.erb to include the following test kitchen configuration file:

driver:

name: docker

privileged: true

use\_sudo: false

provisioner:

name: chef\_zero

# You may wish to disable always updating cookbooks in CI or other testing environments.

# For example:

# always\_update\_cookbooks: <%= !ENV['CI'] %>

always\_update\_cookbooks: true

verifier:

name: inspec

platforms:

- name: centos-7.2

driver\_config:

run\_command: /usr/lib/systemd/systemd

suites:

- name: default

run\_list:

- recipe[<%= cookbook\_name %>::default]

verifier:

inspec\_tests:

- test/smoke/default

attributes:

3. Examine ~/generator/lcd\_origin/templates/default/metadata.rb.erb

4. Edit ~/generator/lcd\_origin/files/default/spec\_helper.rb, and append the following code to the spec\_helper file.

```
RSpec.configure do |config|
```

```
  config.platform = 'centos'
```

```
  config.version = '7.2.1511'
```

```
end
```

5. Edit ~/generator/lcd\_origin/templates/default/README.md.erb to add some text you'd like to see in every readme file.

6. Create ~/.chef/config.rb and add the following:

The config.rb code below creates values for variables which exist within templates. This code can cause problems for other applications due to outstanding bugs so we need to only evaluate it in the context of the chef generate command.

```
cookbook_path [ '~/chef/cookbooks/' ]
```

```
local_mode true
```

```
if File.basename($PROGRAM_NAME).eq?('chef') && ARGV[0].eq?('generate')
```

```
  chefdk.generator.license = "all_rights"
```

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```
chefdk.generator.copyright_holder = "Student Name"
chefdk.generator_cookbook = "/home/user/cookbooks/lcd_origin"
chefdk.generator_email = "you@example.com"
chefdk.generator_cookbook = "~/generator/lcd_origin"
end
```

7. Generate a new cookbook in ~/chef/cookbooks called lcd\_web and examine the results.

8. Generate a new attributes file called "default" in the "lcd\_web" cookbook.

9. Generate a new recipe called users in the "lcd\_web" cookbook.

Now we have a cookbook generated and ready for testing spend some time examining the files we have changed. Have a look through the files and directories that exist within the generator.

### **Lab3. Create and Run ChefSpec Tests**

In this lab, you will write some ChefSpec tests for the lcd\_web cookbook.

Create ChefSpec tests to ensure:

httpd package is installed, enabled, and running; use the default\_spec.rb for this.

net-tools package is installed.

A group called developers exists and a user called webadmin exists that has group membership of developers. Use the users\_spec.rb for this.

Run the tests.