Answers

**Shape and Space**

**Unit 1 Line Master 9f**

1. Volume: 331.6625 cm3; label area: 204.1 cm2;   
design cost: $306.15

2. a) The jars have similar volumes. To the nearest cubic   
 centimetre, the volume of the first jar is 593 cm3 and   
 the volume of the second jar is 580 cm3.

b) The first jar; to the nearest cent, the label design cost   
 for the first jar is $256.22 and the label design cost for   
 the second jar is $296.26.

3. In the main program, I would set the **pricePerSquareCM** variable to 1.25 instead of 1.5.

4. Sample answer:

The first part of the subprogram **collectInfo** would change to

ask for the container radius

In the subprogram **calculateVolume**, I would delete the line that determines the radius.

I would change the subprogram **calculateLabelArea**,   
like this:

subprogram calculateLabelArea

labelArea = 2 \* pi \* radius \* labelHeight

display **labelArea**

Answers (cont’d)

**Shape and Space**

**Unit 1 Line Master 9g**

5. Sample answer:

a) I would create a new variable for the surface area   
 of the top, called **topSA**.  
 In the pseudocode, I would add a new subprogram   
 called **calculateTopSA**:

subprogram calculateTopSA

topSA = pi \* radius \* radius

display topSA

In the program, it would look like this:  
 **Graphical user interface, application

Description automatically generated**

b) I would create a new variable for the cost to design the  
 sticker, called **topStickerCost**.  
 In the pseudocode, I would add a new subprogram   
 called **calculateTopStickerCost**:

subprogram calculateTopStickerCost

topStickerCost = pricePerSquareCM \* topSA

display topStickerCost

In the program, it would look like this:

**Graphical user interface, text, application, chat or text message

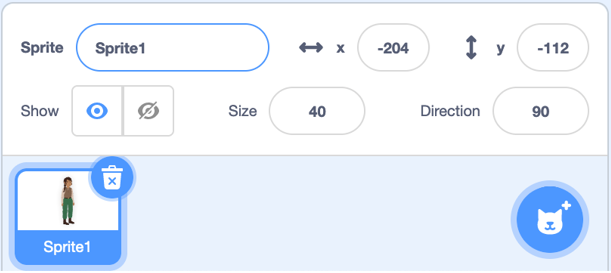
Description automatically generated**

Answers (cont’d)

**Shape and Space**

**Unit 1 Line Master 9h**

**Extensions:**Sample answers:

* Below the stage, I selected **Show** to have the sprite appear,  
  made the size 40, and dragged the sprite to the lower left corner of the stage.  
    
  Then, at the end of the main program, I added a block that made the sprite announce what the design cost was.  
  Graphical user interface, text, application, chat or text message

  Description automatically generated
* I added a block to the end of the label design cost subprogram. The new block multiplies the **designCost** variable by 100, rounds it, then divides by 100.

The block looks like this:

Graphical user interface, text, application, chat or text message

Description automatically generated

* Samples using grocery items will vary.

Answers (cont’d)

**Shape and Space**

**Unit 1 Line Master 9i**

* Text

  Description automatically generatedSample program based on modifying Yindi’s program. For this sample, an image was added to help clients visualize the box and which face will be considered the base.

Timeline

Description automatically generated Output for box with length 6 cm, width 4 cm, and height   
 8.5 cm.