

Personal Information

Personal Information

Spatial Visualization Test used
in Cornell University Engineering
Success (CUES) Program.

Please type a response:

Name

Preferred Name

NetID

Gender:

- ☐ Male
- ☐ Female
-

Are you Hispanic or Latino?

- ☐ Yes
- ☐ No
-

Select all that apply.

- ☐ African American or Black
- ☐ White (including Middle Eastern)
- ☐ Native Hawaiian/ Pacific Islander (Original Peoples)
- ☐ Asian (Including Indian subcontinent and the Philippines)
- ☐ Other
-

Ethnicity (Optional)

- ☐ If Asian: What is your family's origin?
- ☐ If Native American/ Alaska Native: What is your tribal Affiliation?
-

Survey

Academic Interests

The following questions are aimed at gauging your interest and experience in engineering fields.

Please rank the following STEM majors in order of interest from most interested (1) to least interested (5):

- Material Science and Engineering
- Chemical Science and Engineering
- Biological/Biomedical Science and Engineering

• Mechanical Engineering

- Electrical Engineering

How much programming experience do you have?

	None	Little	Some	A Lot
Matlab	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Programming Language	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please select your preference:

- ☐ Image Analysis
- ☐ Design

Do you have any research experience? If so, please briefly describe.

Do you have any internship experience? If so, please briefly describe.

Research Questions

Research

The following questions are aimed at gauging your experience with Spatial Visualization Concepts.

Have you taken a spatial visualization or graphics course in the past?

- ☐ Yes
- ☐ No

Please state your level of agreement with the following:

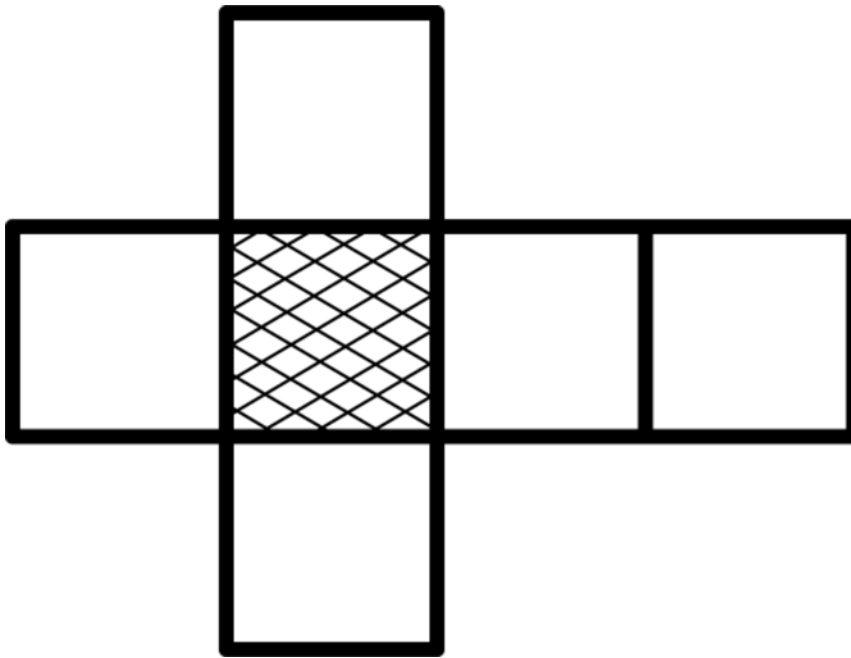
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You are able to mentally rotate, twist or invert any visual object:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You are able to use software, such as Matlab, SolidWorks and/or ImageJ to create and manipulate visual objects:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Practice Questions 1

Section 1: Practice Questions

Sample Question 1:

Shown below is an example of the type of question included in this first section of this test.

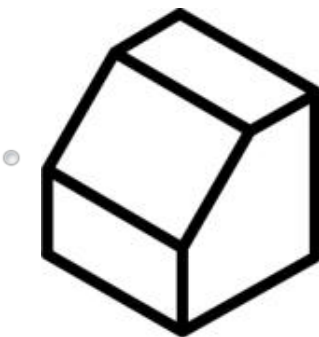


Presented is a development and five three-dimensional objects. The development shows the inside surfaces of a three-dimensional object. The shaded portion of the development indicates the bottom surface of the three-dimensional object. You are to:

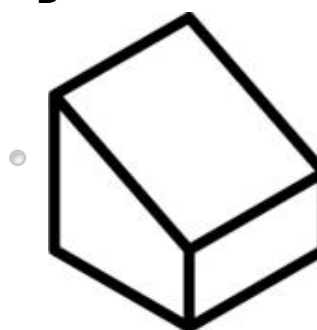
1. Picture in your mind what the development looks like when folded into a three-dimensional object;
2. Select from among the five objects the one that looks like the folded development.

Which is the corresponding three-dimensional object to the development shown above?

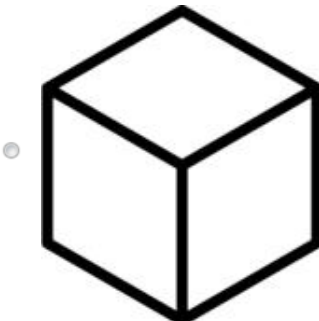
A



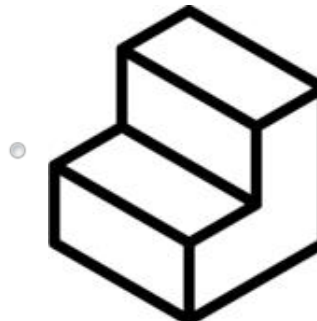
D



B



E



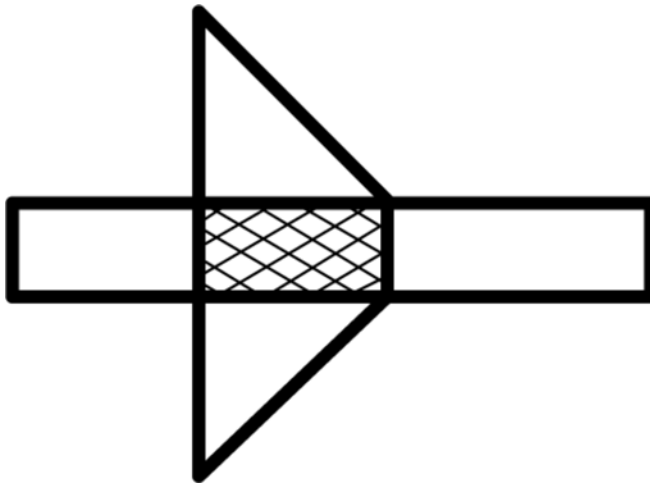
C



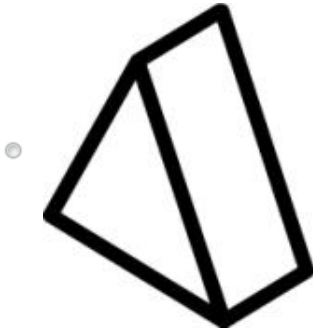
The correct answer for this question is B.

Sample Question 2:

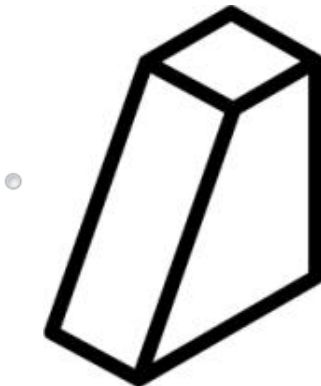
Now look at this example shown below and try to select the one three-dimensional object that can be made when the development is folded. Remember that the development shows the inside of the object and the development's shaded portion indicates the bottom of the object.



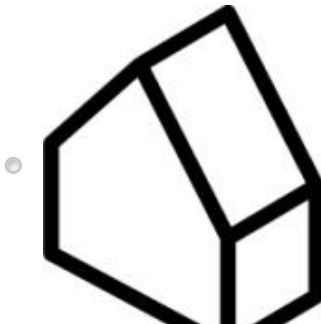
A



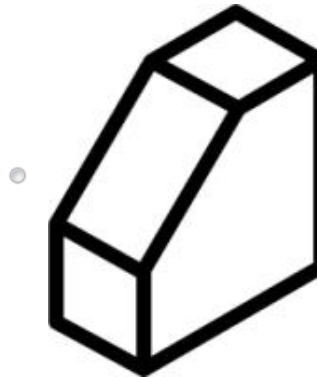
B



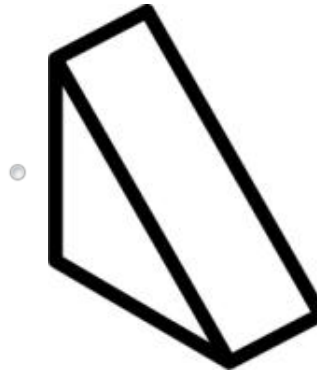
C



D



E



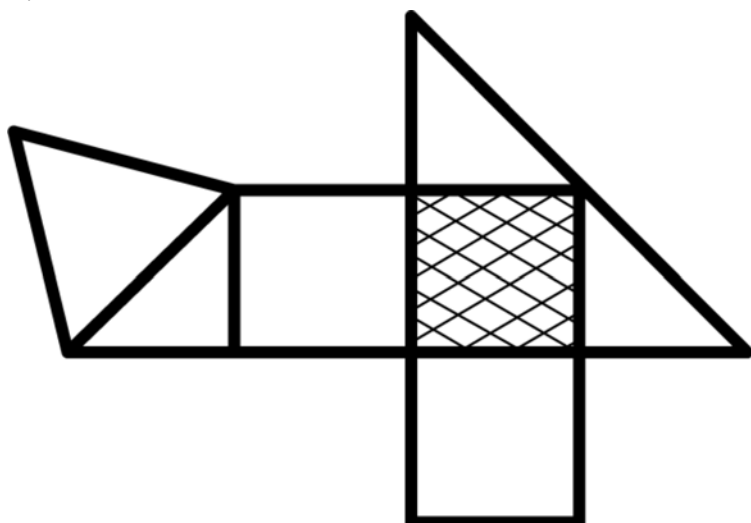
The correct answer for this question is E.

SV Test 1

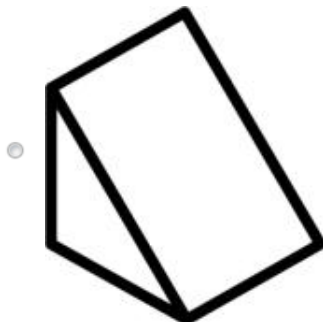
Section 1: Test

Now you are ready to begin. This first section consists of 12 questions. Please remember that each question has only one correct answer.

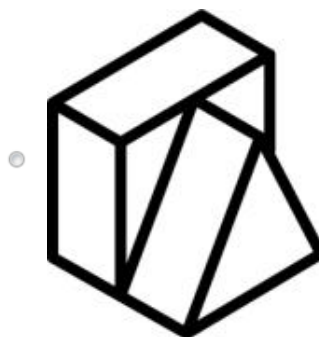
1.



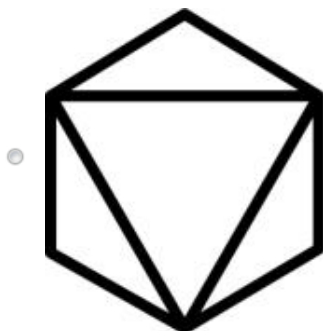
A



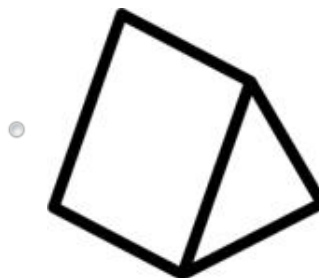
D



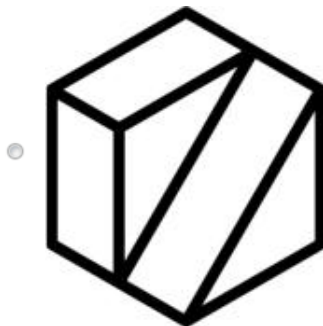
B



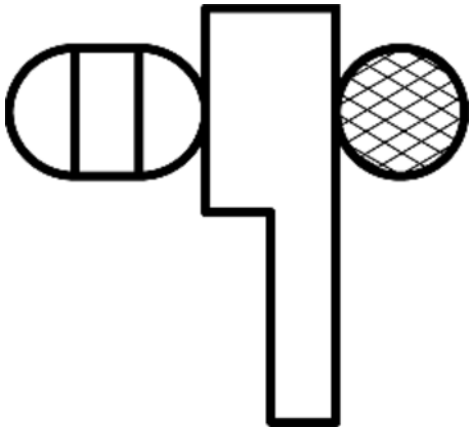
E



C



2.



A



B



C



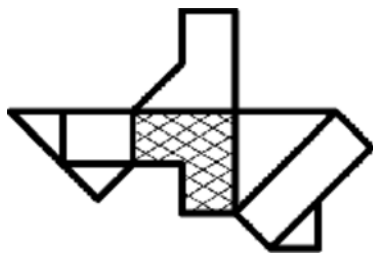
D



E



3.



A



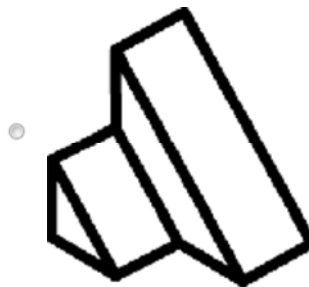
B



C



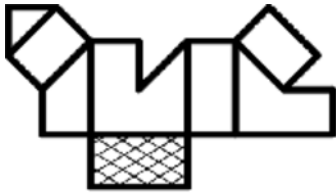
D



E



4.



A



B



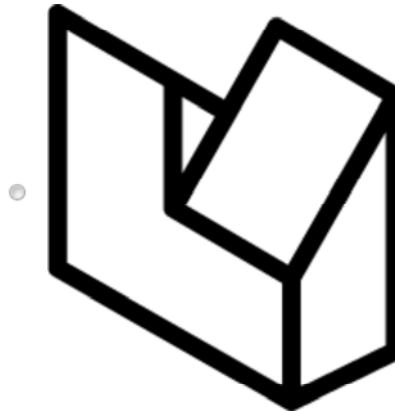
C



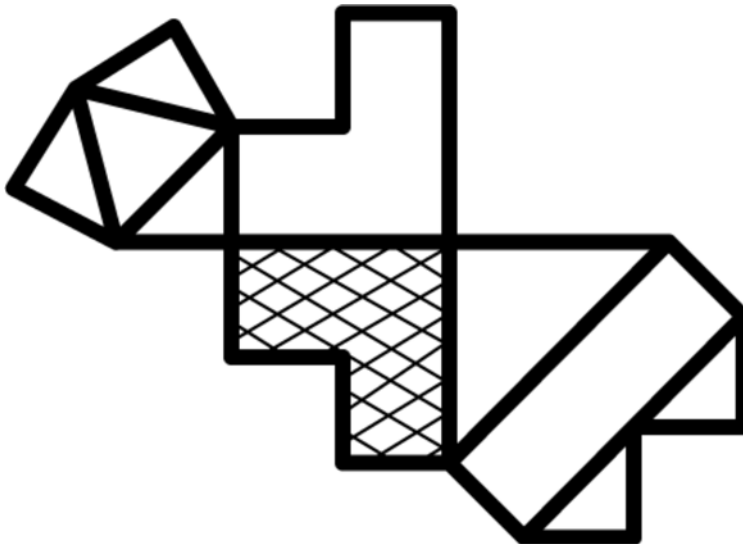
D



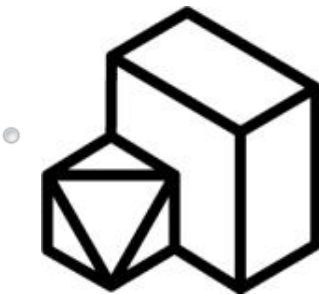
E



5.



A



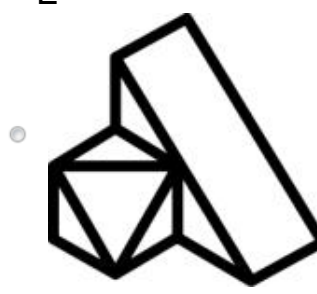
D



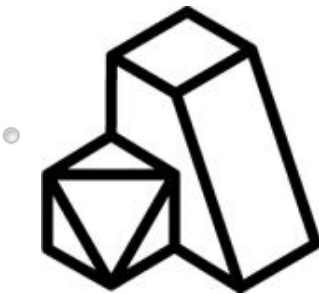
B



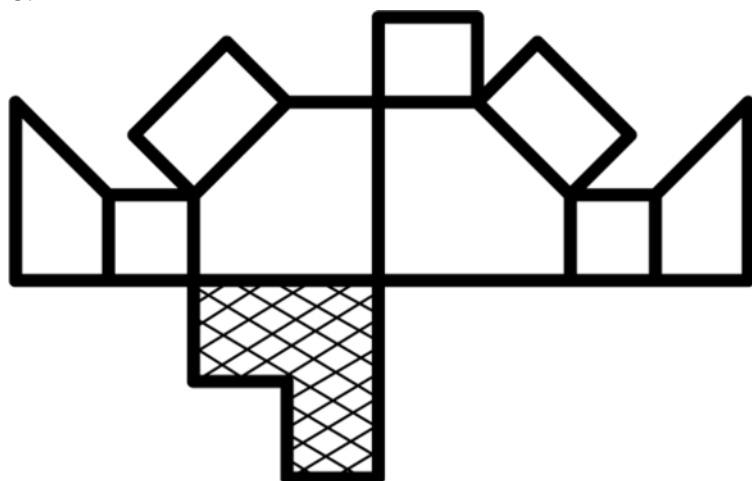
E



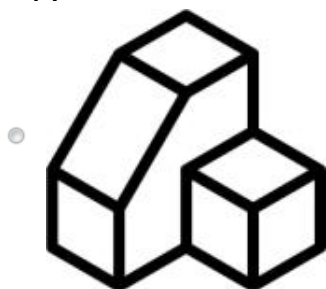
C



6.



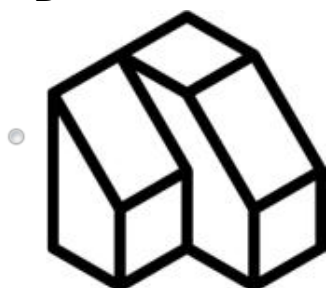
A



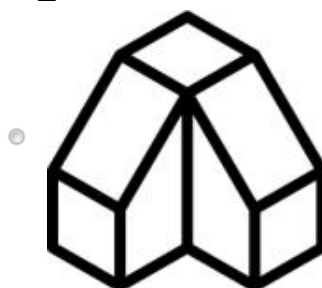
D



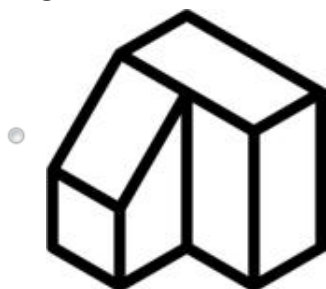
B



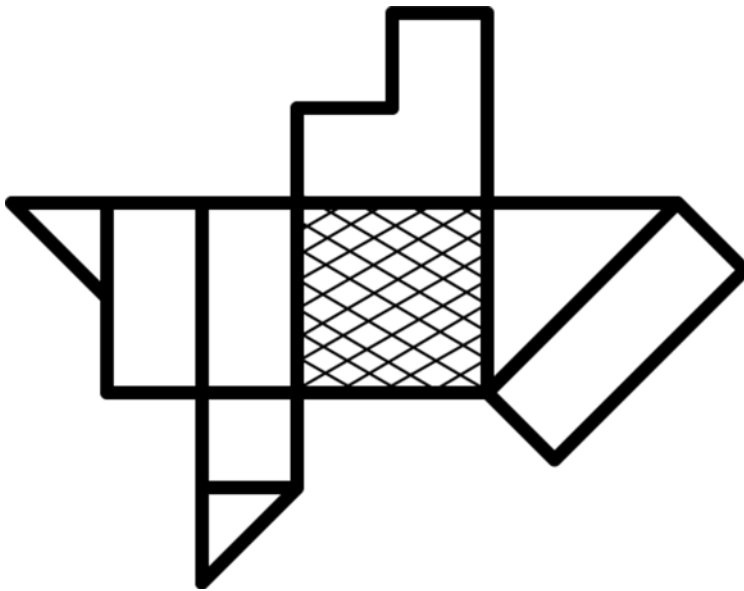
E



C



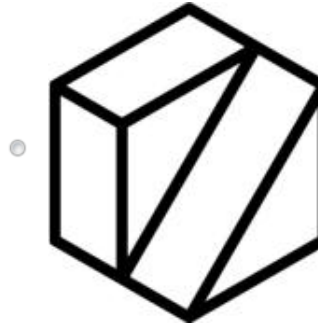
7.



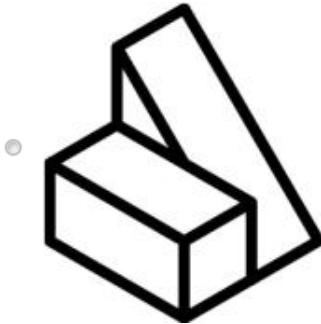
A



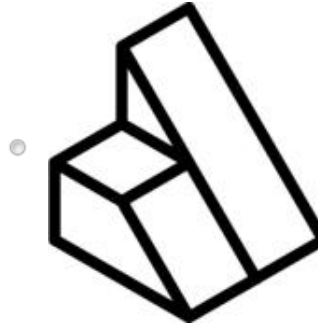
D



B



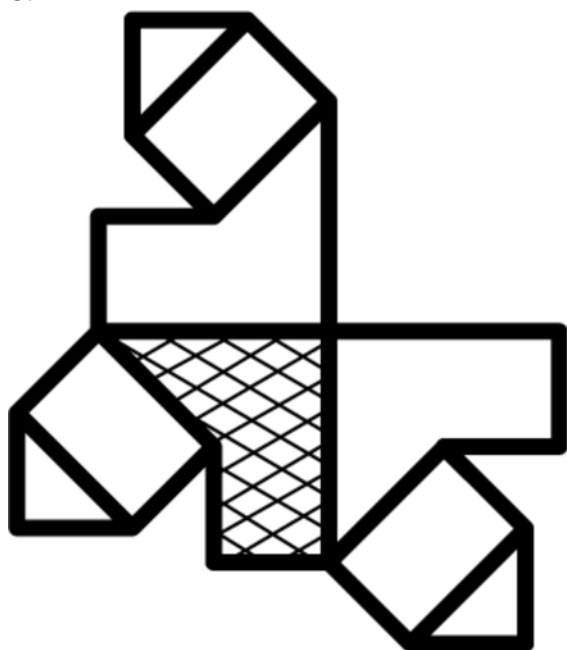
E



C



8.



A



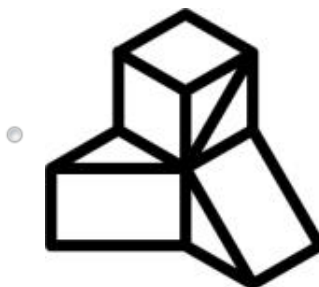
B



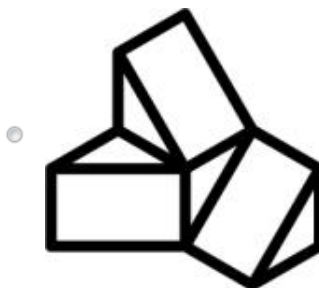
C



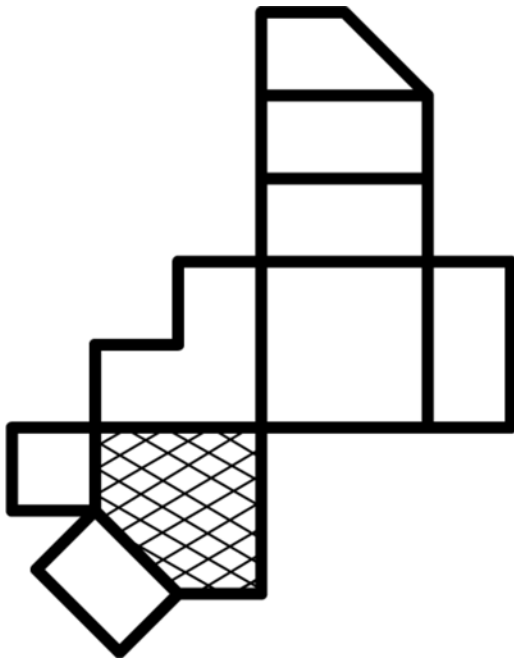
D



E



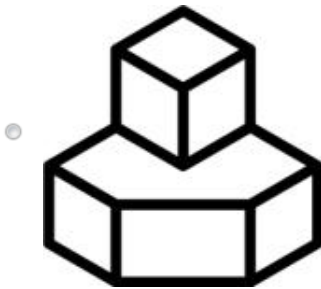
9.



A



B



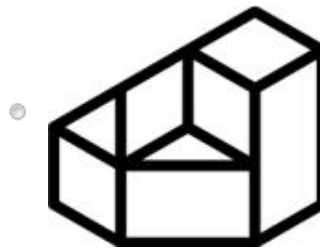
C



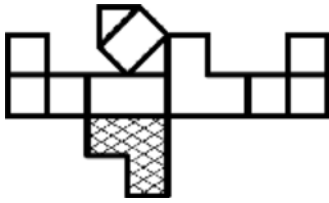
D



E



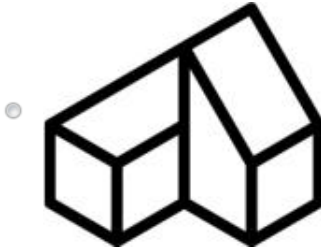
10.



A



B



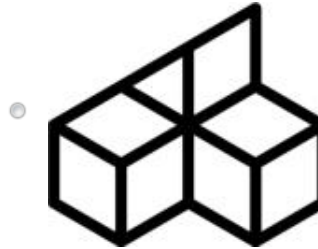
C



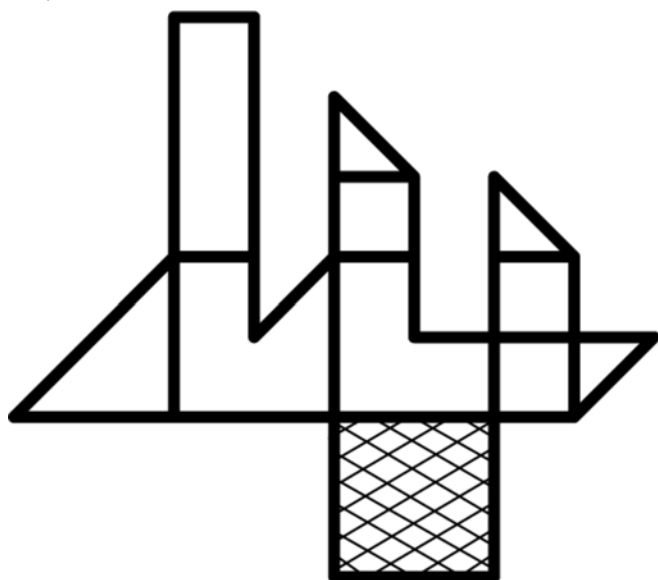
D



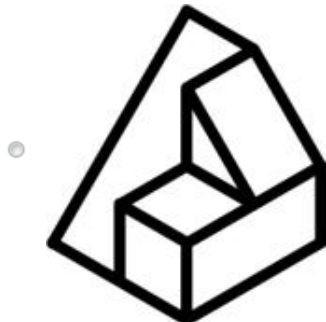
E



12.



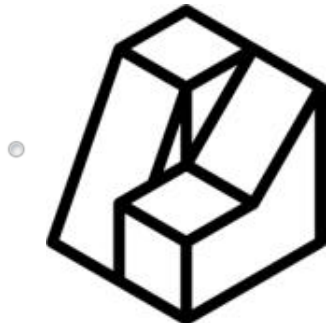
A



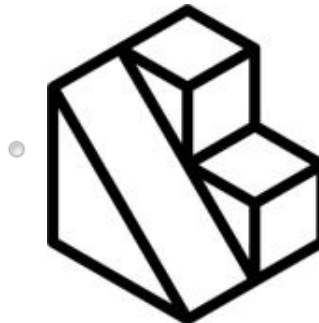
D



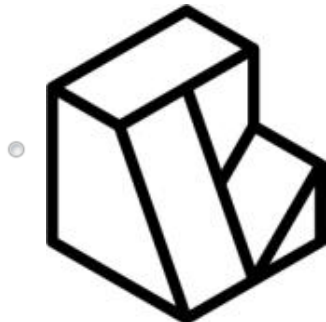
B



E



C



Section 2: Practice Questions

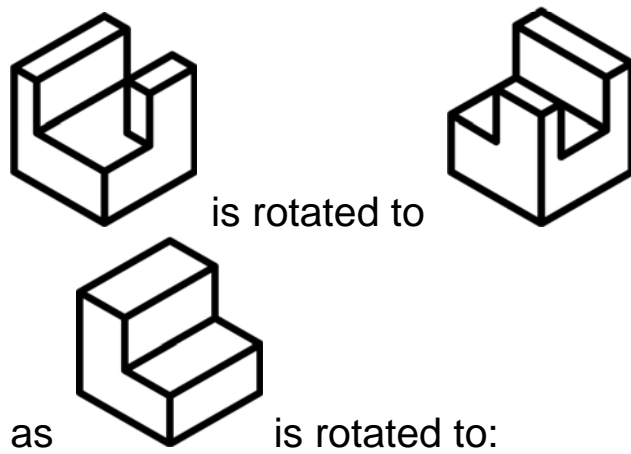
The second section is designed to see how well you can visualize the rotation of three- dimensional objects.

During this section you are to:

- 1. study how the object in the top line of the question is rotated;*
 - 2. picture in your mind what the object shown in the middle line of the question looks like when rotated in the same manner;*
 - 3. select from among the five drawings given in the bottom line of the question the one that looks like the object rotated in the correct position.*
-

Sample Question 1:

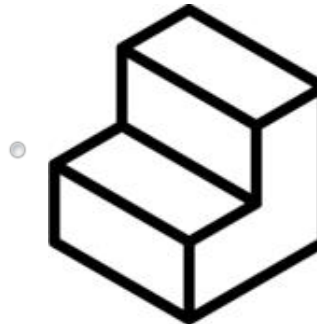
Shown below is an example of the type of question included in the second section.



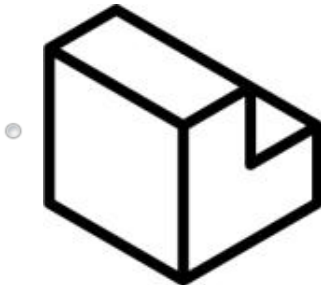
A



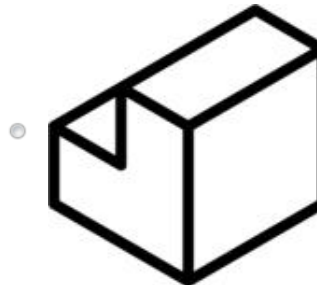
D



B



E



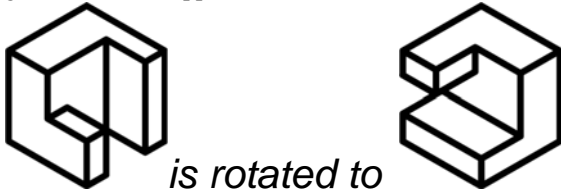
C




The correct answer for this question is D.

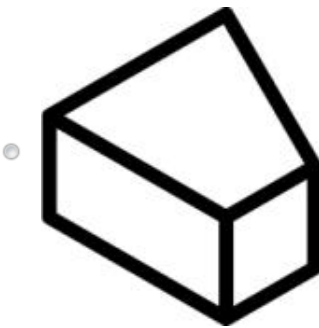
Sample Question 2:

Now look at the next example shown below and try to select the drawing that looks like the object in the correct position when the given rotation is applied.

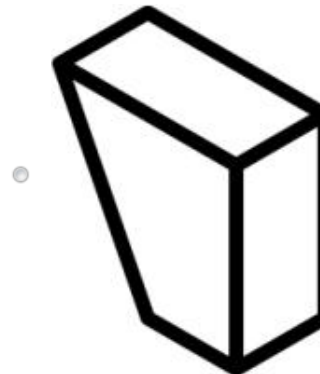


as  is rotated to:

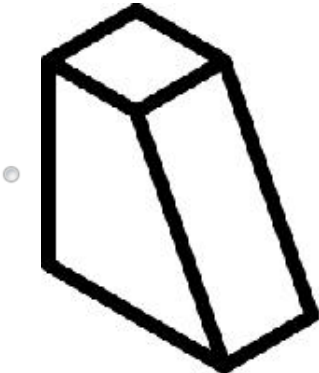
A



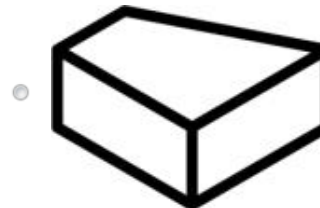
D



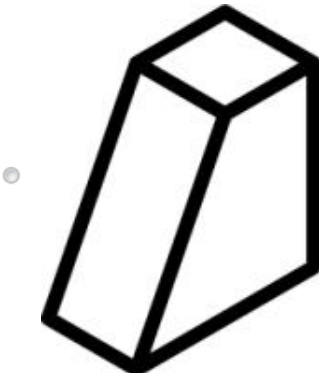
B



E



C



Notice that the given rotation in this example is more complex. The correct answer for this example is B.

SV Test 2

Section 2: Test

Now you are ready to begin. This second section consists of 12 questions.

13.

*is rotated to**as**is rotated to:*

A



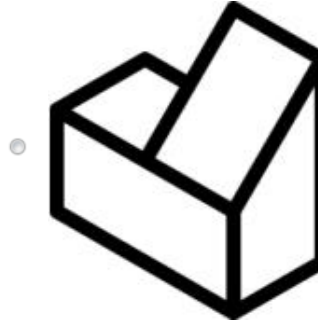
D



B



E



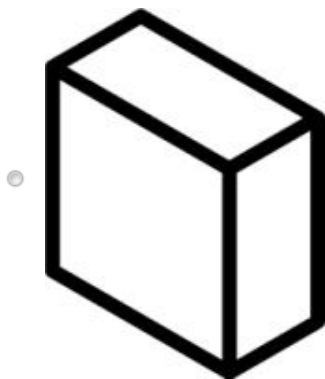
C



14.

*is rotated to**as**is rotated to:*

A



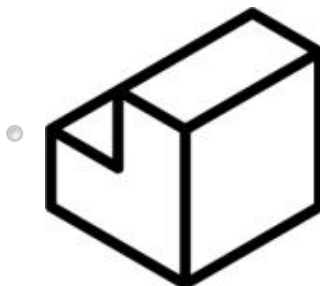
D



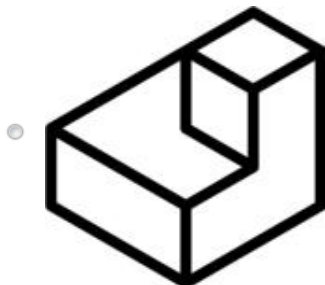
B



E



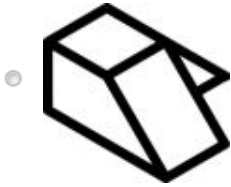
C



15.

*is rotated to**as**is rotated to:*

A



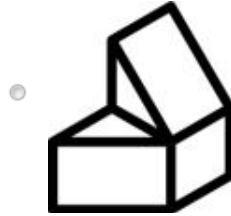
B



C



D



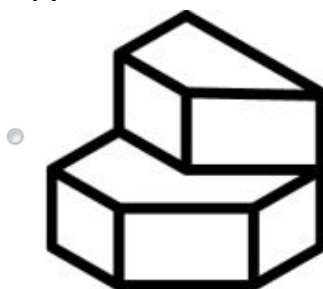
E



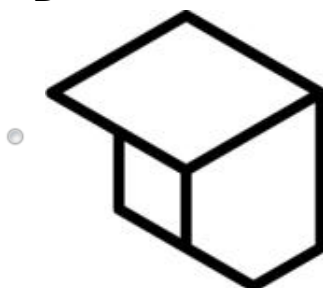
16.

*is rotated to**as**is rotated to:*

A



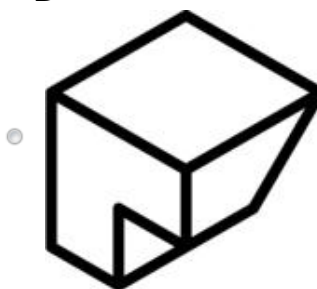
B



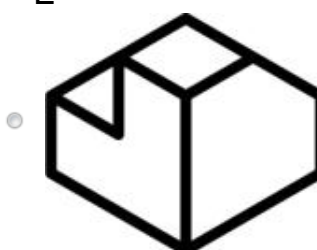
C



D



E



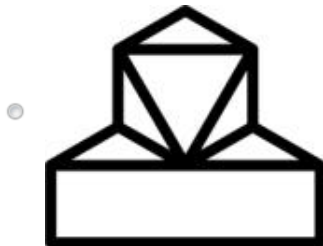
17.

*is rotated to**as**is rotated to:*

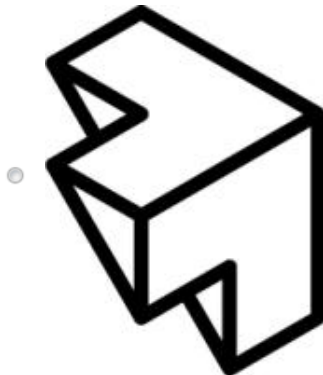
A



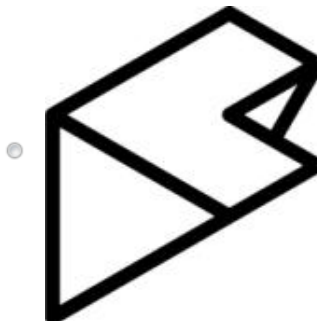
B



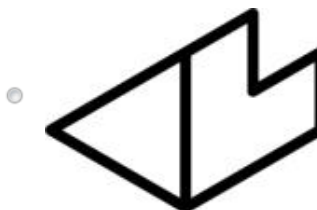
C



D



E



18.

*is rotated to*

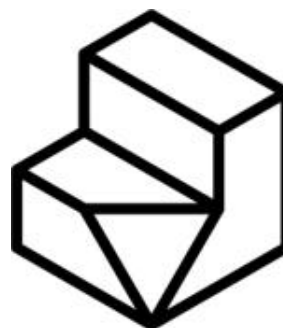
as

*is rotated to:*

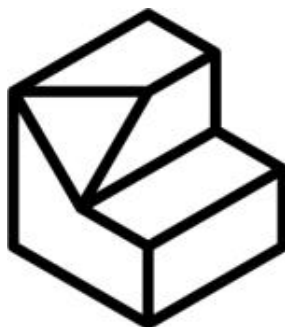
A



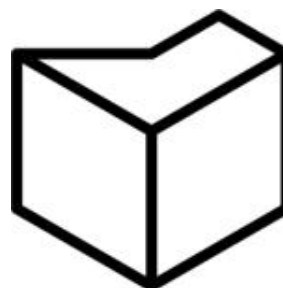
D



B



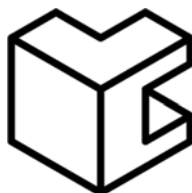
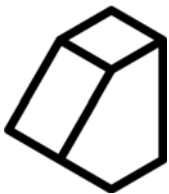
E



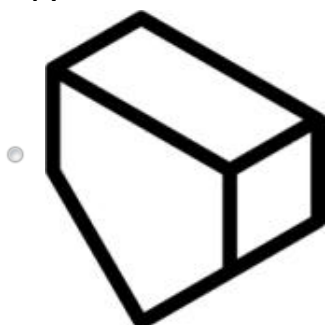
C



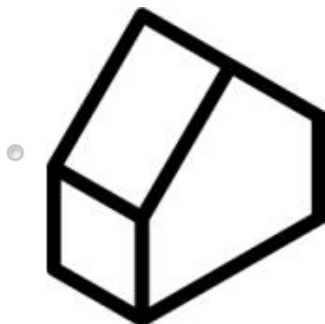
19.

*is rotated to**as**is rotated to:*

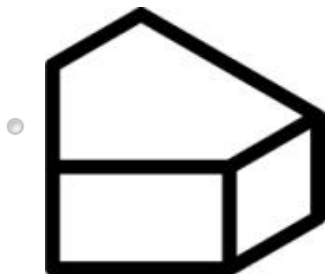
A



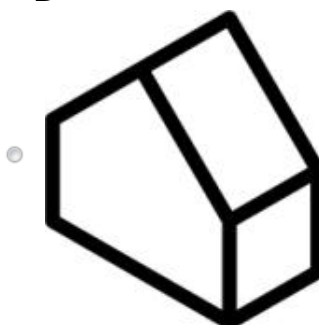
B



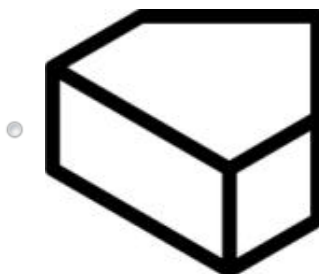
C



D



E



20.

*is rotated to**as**is rotated to:*

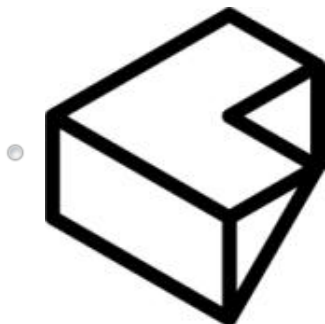
A



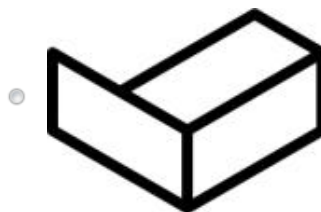
D



B



E



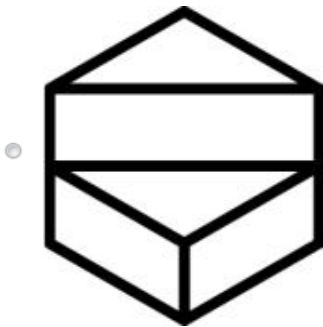
C



21.

*is rotated to**as**is rotated to:*

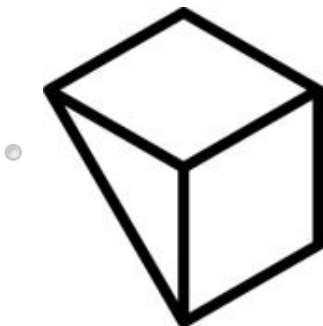
A



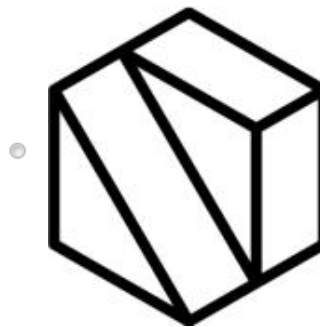
B



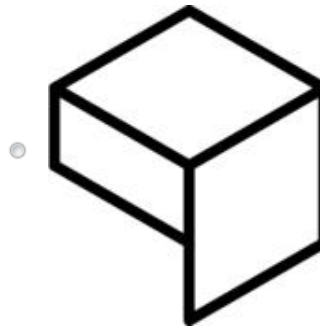
C



D



E



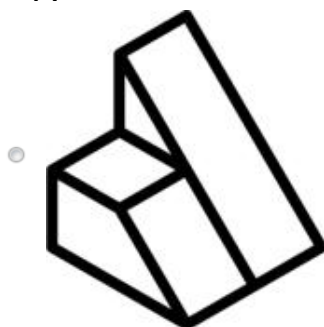
22.

*is rotated to*

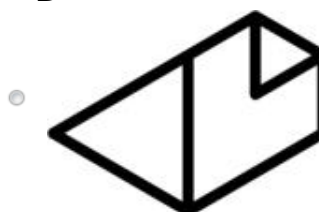
as

*is rotated to:*

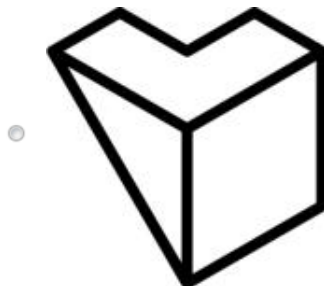
A



D



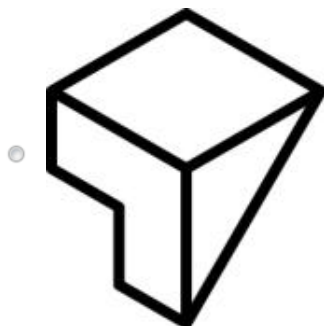
B



E



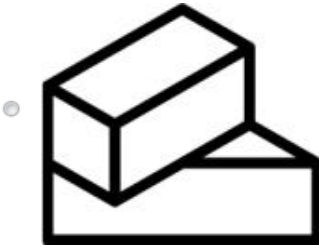
C



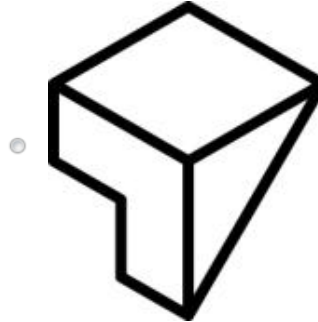
23.

*is rotated to**as**is rotated to:*

A



D



B



E



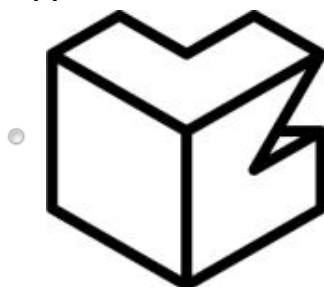
C



24.

*is rotated to**as**is rotated to:*

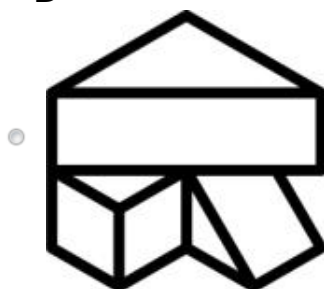
A



D



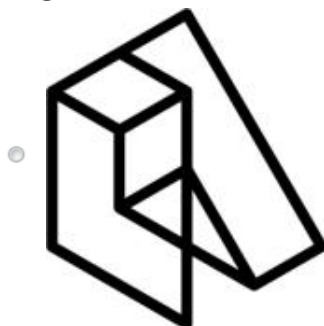
B



E



C



Practice Questions 3Section 3: Practice Questions

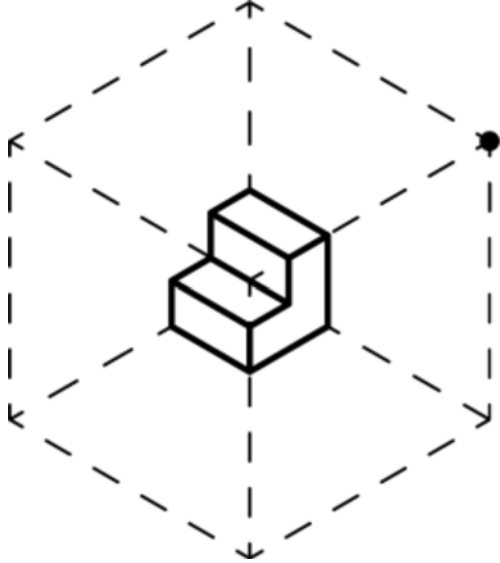
The third section is designed to see how well you can visualize what three-dimensional objects look like from various viewing positions.

The example shows an object positioned in the middle of a "glass box" and five drawings representing what the same object looks like in different viewing positions. The black dot in the top right corner of the "glass box" identifies the desired viewing position. You are to:

1. imagine yourself moving around the "glass box" until the black dot is located directly between you and the object;
 2. from this viewing position, picture in your mind what the object in the "glass box" looks like;
 3. select from among the five drawings (A, B, C, D, E) the one that looks like the object as seen from the viewing position.
-

Sample Question 1:

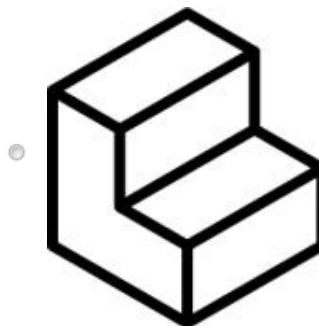
Shown below is an example of the type of question included in the third section.



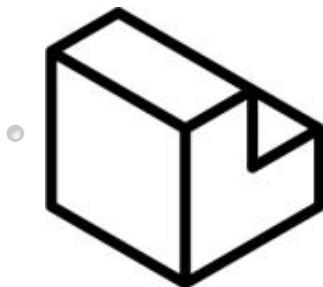
A



D



B



E



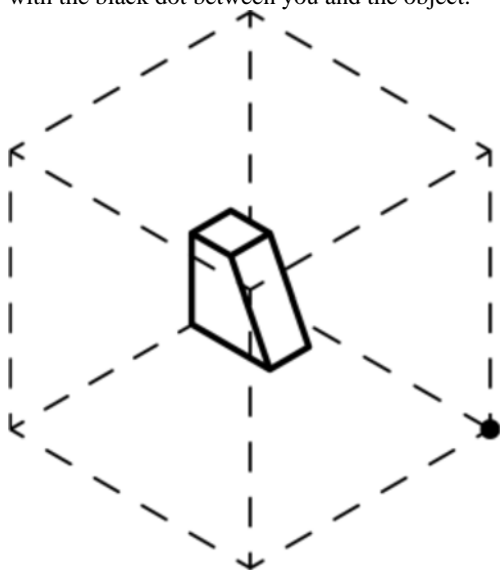
C



The correct answer for this question is E.

Sample Question 2:

Now look at this next example and try to select the one drawing that represents what the object looks like from the given viewing position. Remember that the object is located in the middle of the "glass box" and you are imagining yourself looking at the object with the black dot between you and the object.



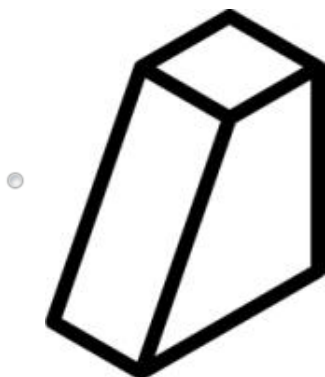
A



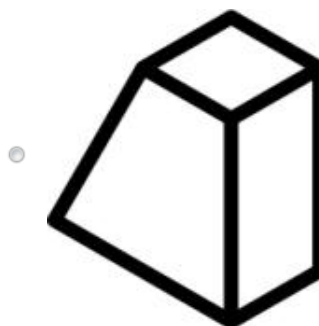
D



B



E



C



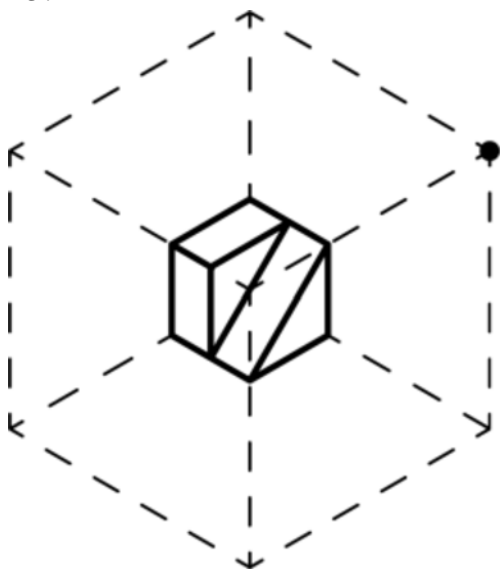
The correct answer for this example is C.

SV Test 3

Section 3: Test

Now you are ready to begin. This third section consists of 12 questions.

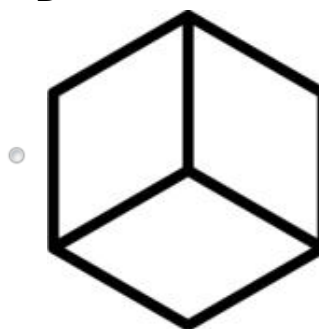
25.



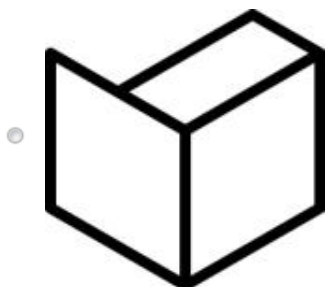
A



D



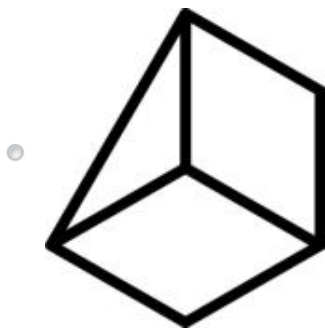
B



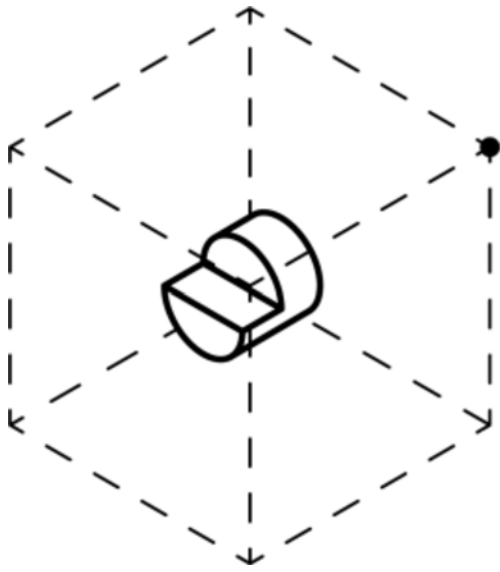
E



C



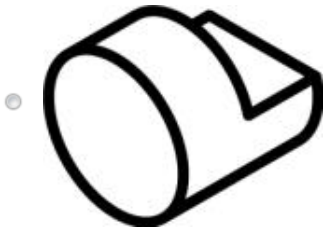
26.



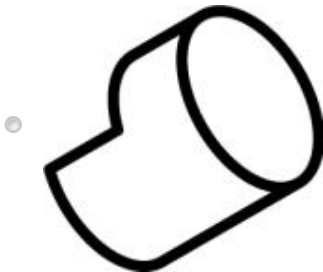
A



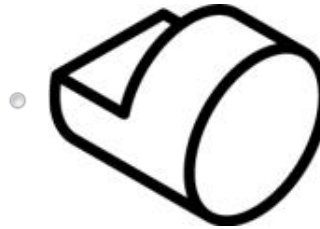
B



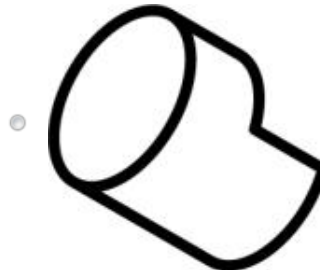
C



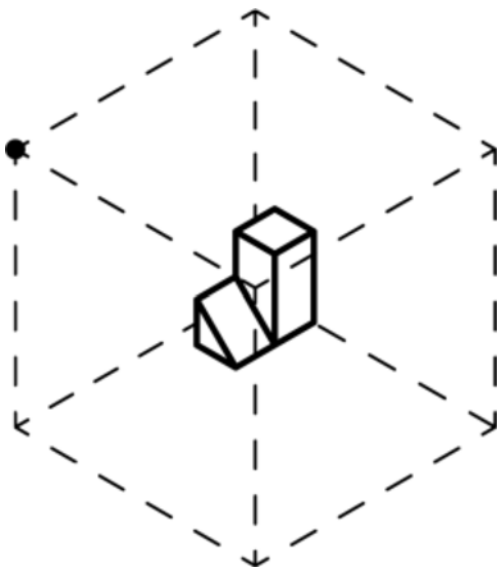
D



E



27.



A



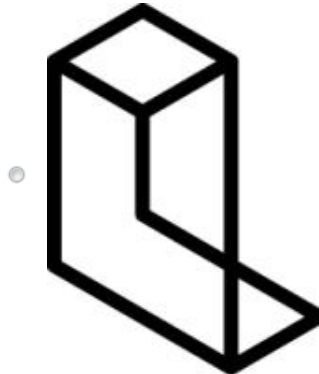
D



B



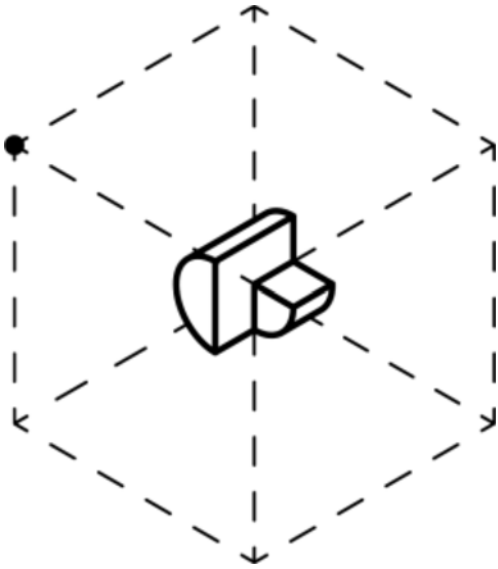
E



C



28.



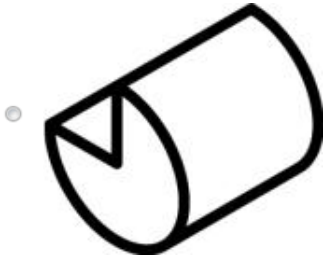
A



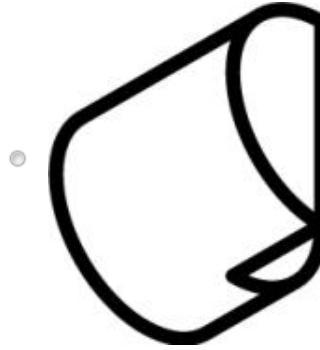
B



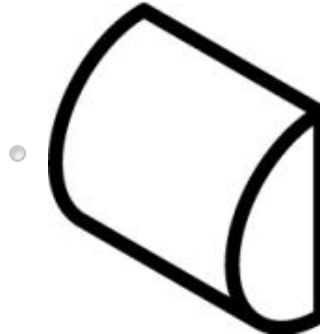
C



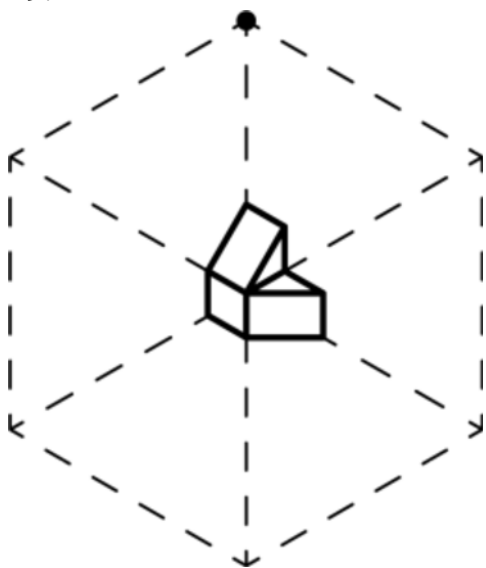
D



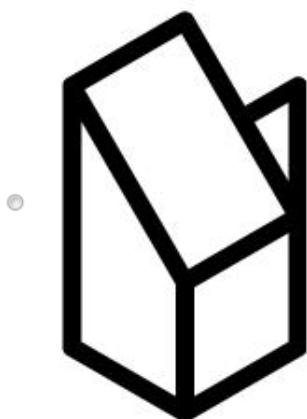
E



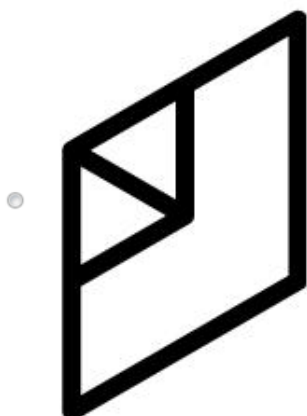
29.



A



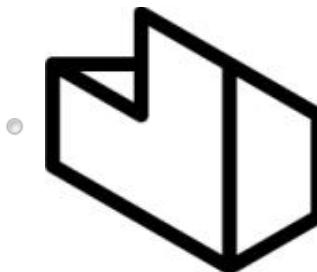
B



C



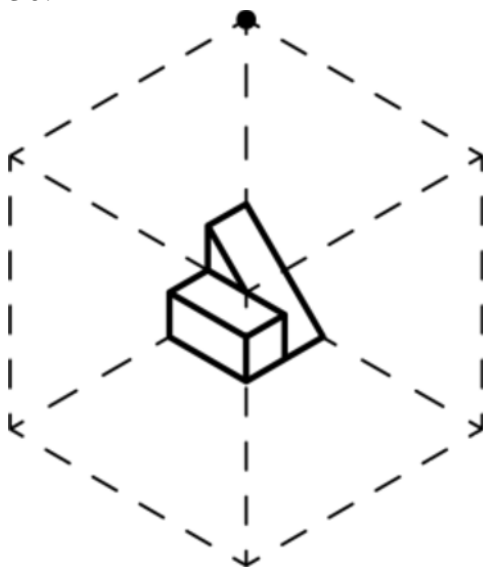
D



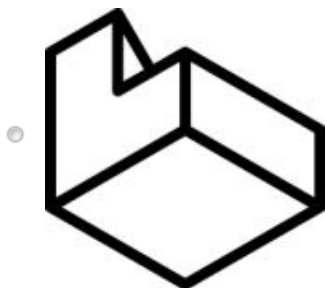
E



30.



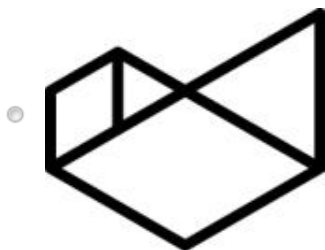
A



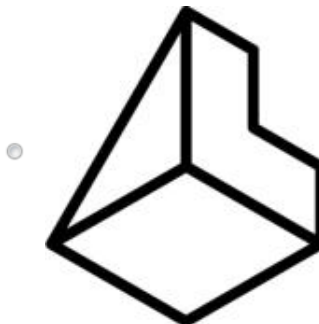
B



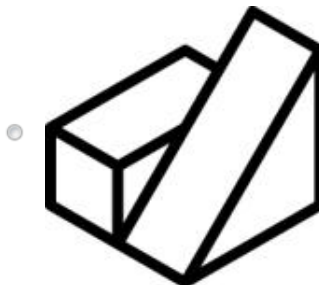
C



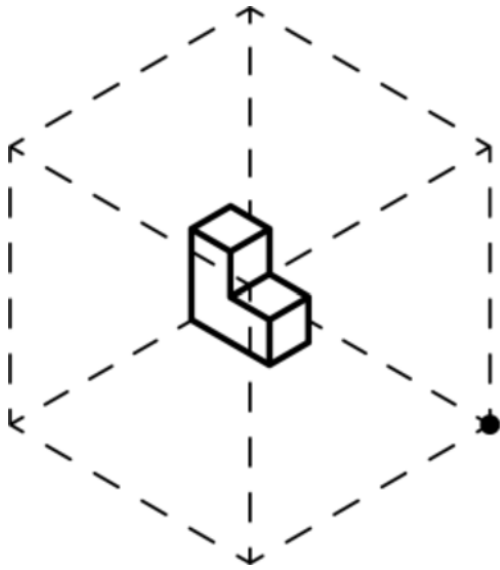
D



E



31.



A



B



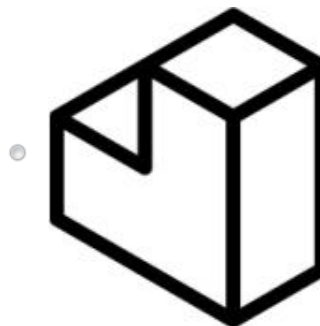
C



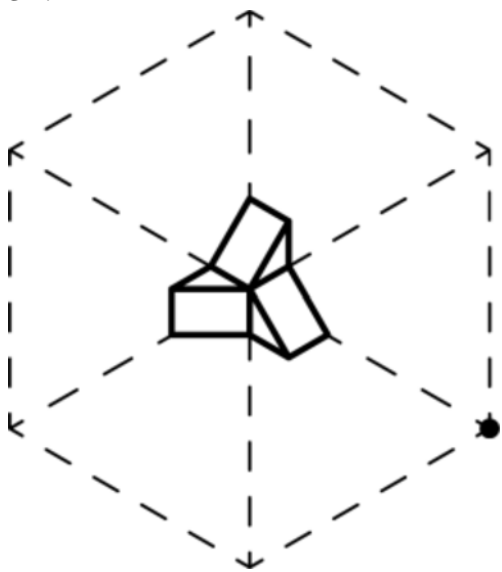
D



E



32.



A



B



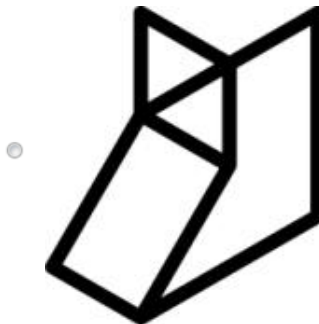
C



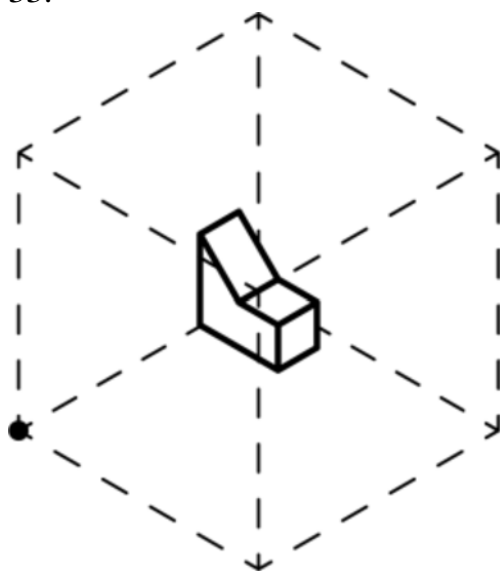
D



E



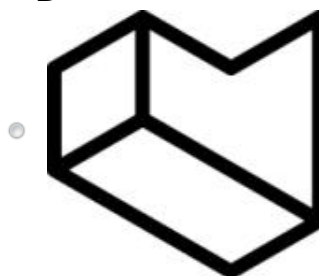
33.



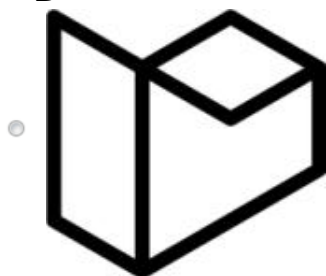
A



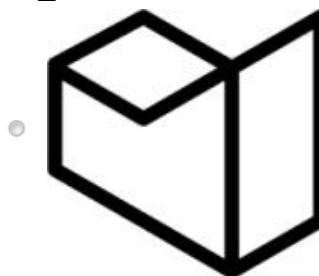
D



B



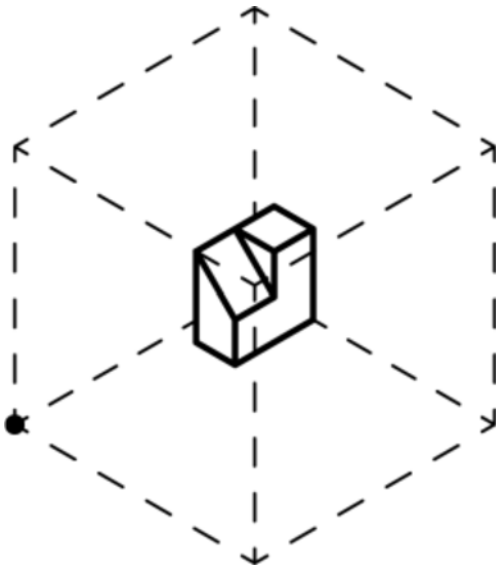
E



C



34.



A



D



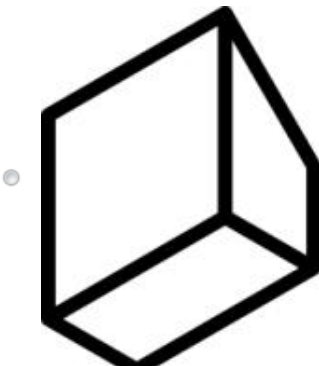
B



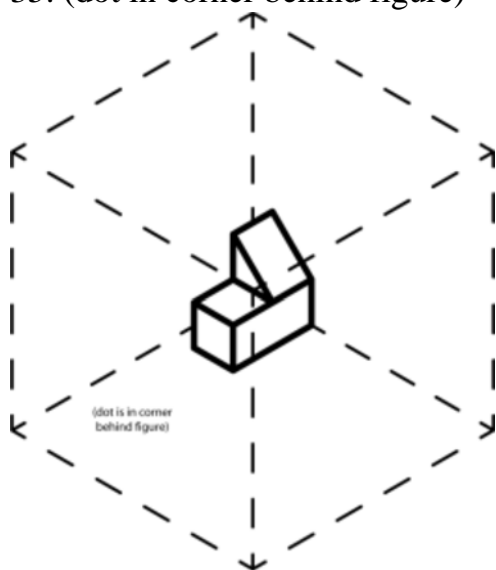
E



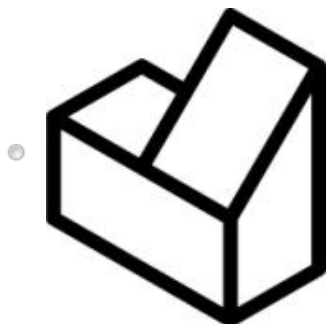
C



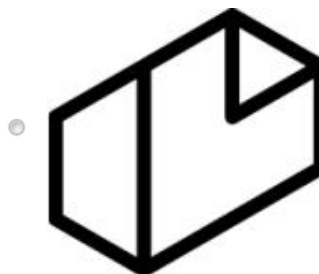
35. (dot in corner behind figure)



A



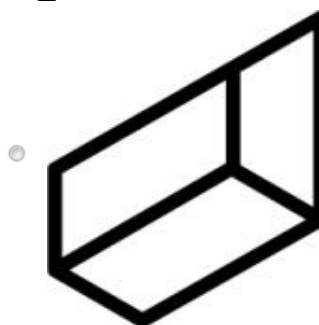
D



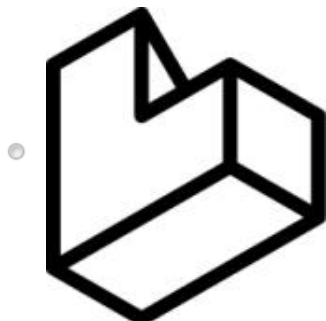
B



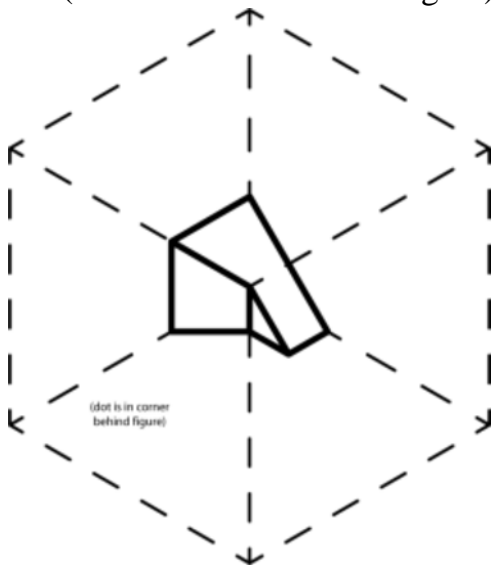
E



C



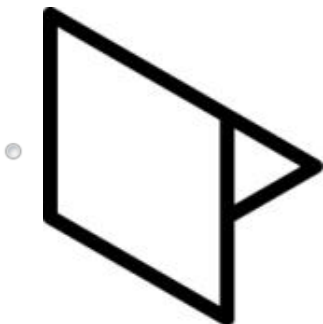
36. (dot is in corner behind figure)



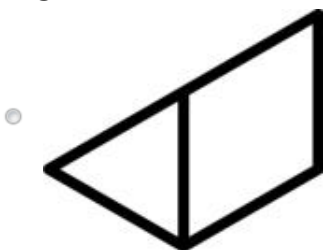
A



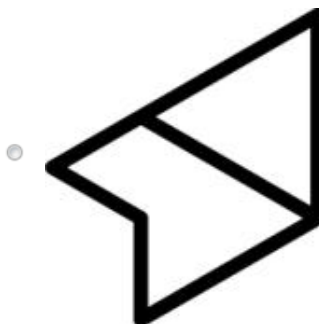
B



C



D



E

