Graphics Skills Builder

PGHS FACULTY OF TECHNOLOGIES

Name:_____

Class:_____

Teacher:_____

Task	Date Issued	Date Due	Received?
Task 1			
Task 2			
Task 3			
Task 4			
Task 5			
Task 6			
Task 7			
Task 8			
Task 9			
Task 10			
Task 11			
Task 12			

Task 1 - Dimensioning

Question 1

a) State the abbreviations for the following units of measurement.

i) Millimetres _____

ii) Centimetres _____

iii) Metres _____

b) How many millimetres are in a...

i) *...centimetre?* _____

ii) *...metre?* _____

c) Convert the following dimensions to millimetres.

i) 5.5 centimetres _____

ii) 10.2 centimetres _____

iii) 0.7 centimetres _____

iv) 30 centimetres _____

v) 1.8 metres _____

*d) When we are dimensioning an object, there are three dimensions we can use. What are they called? (Hint - they begin with **L, H** and **W**!)*

i) _____

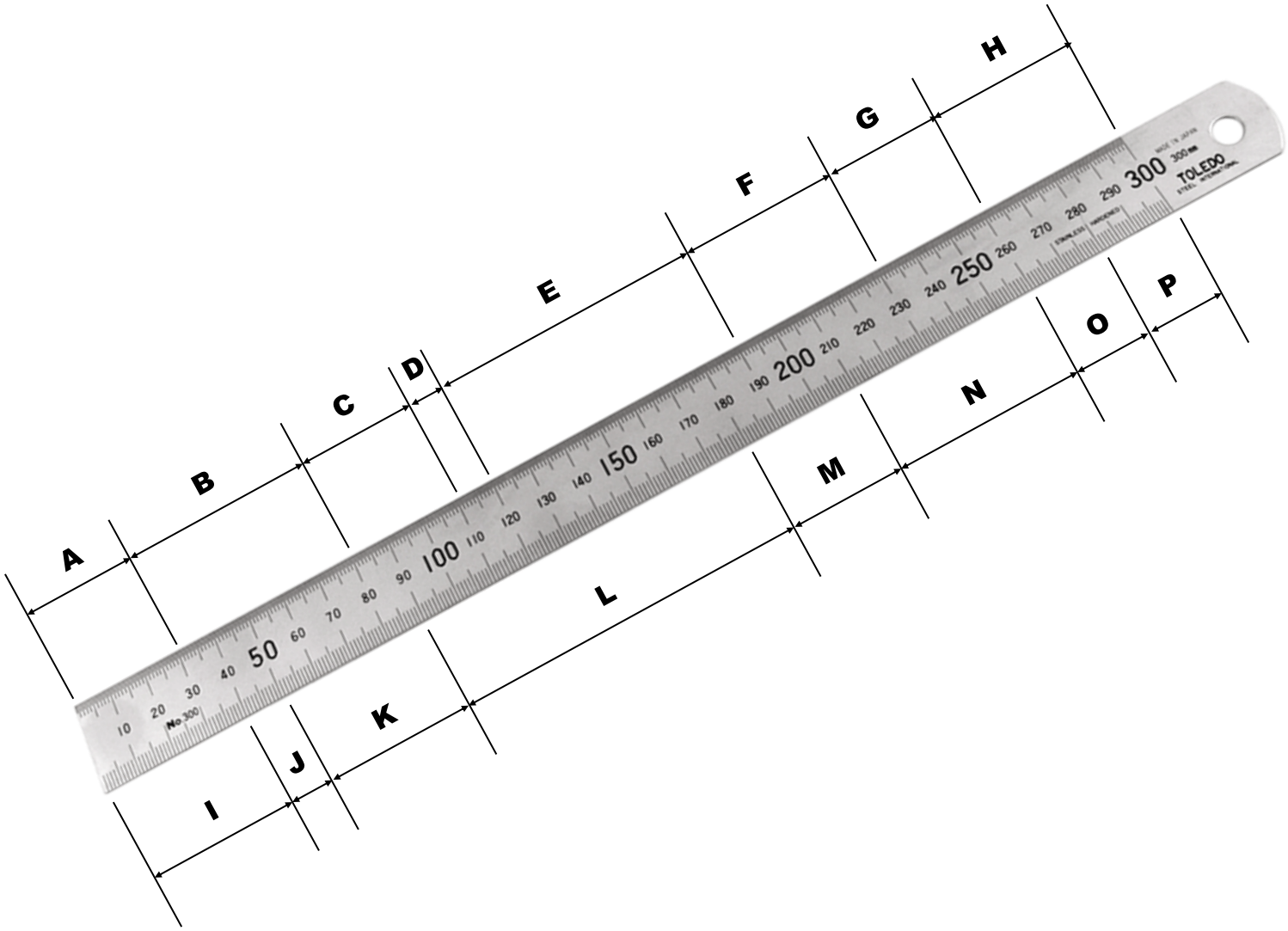
ii) _____

iii) _____

Task 1 - Dimensioning

Question 2

*A 300mm steel rule is given below. In the spaces provided list the given dimensions for letters **A** to **P**. All dimensions are to the closest 10mm.*



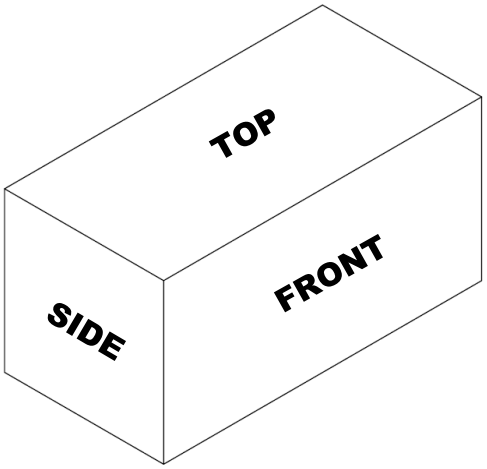
A - _____
B - _____
C - _____
D - _____
E - _____
F - _____
G - _____
H - _____

I - _____
J - _____
K - _____
L - _____
M - _____
N - _____
O - _____
P - _____

Task 2 - Orthographics

Question 1

An orthographic drawing of a simple rectangular prism is shown below. A pictorial is shown to the right. One orthographic view is labelled. Label the remaining views.



Pictorial

TOP

_____

SIDE

FRONT

Elevation

_____

_____

Task 2 - Orthographics

Question 2

a) *An orthographic drawing of a simple rectangular prism is shown below. Which orthographic view shows us...*

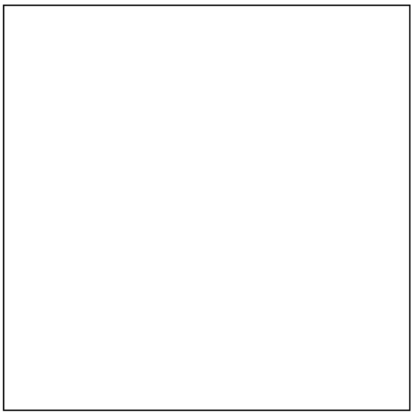
i) ...length and height? _____

ii) ...height and width? _____

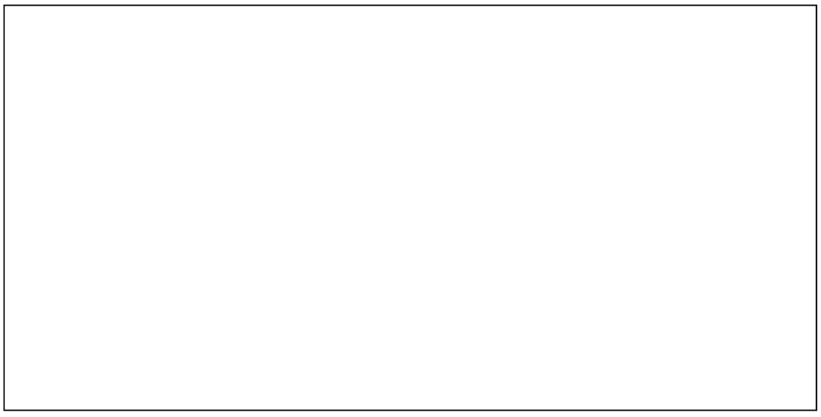
iii) ...width and length? _____

b) *Label a **length, width and height** on one or more of the orthographic views below.*

Plan



End Elevation



Elevation

Task 2 - Orthographics

Question 3

*An orthographic drawing of a **100mm by 50mm by 50mm** rectangular prism is shown below.*

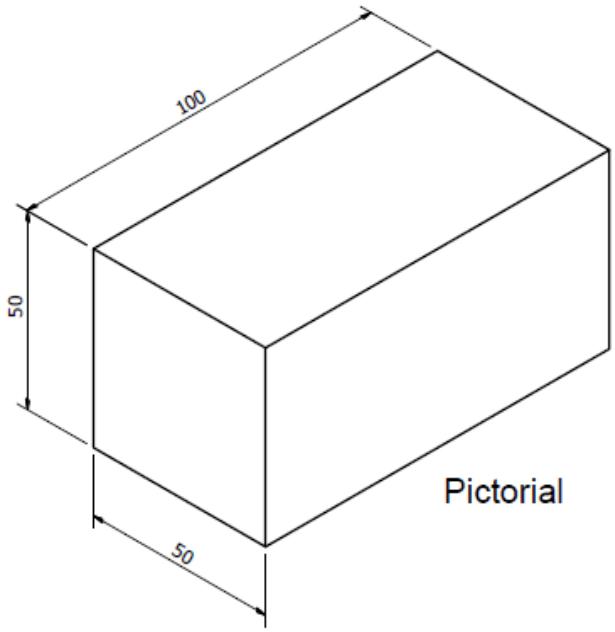
a) *Complete the blanks in the following sentences from the word bank below. Each word is used only once.*

***Word Bank:** dimension, length, height, Plan*

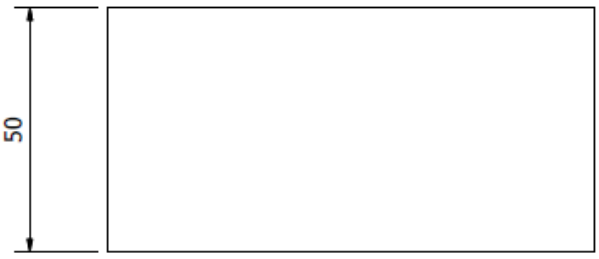
The 100mm dimension shown on the Elevation is a _____. The 50mm dimension shown on the _____ is a width. The 50mm _____ shown on the End Elevation is a _____.

b) *~~Strikethrough~~ the incorrect words in the following sentences to leave a correct statement.*

The Plan is located above/beside/below the Elevation. The Elevation is located above/beside/below the End Elevation. You can have one/two End Elevation(s).

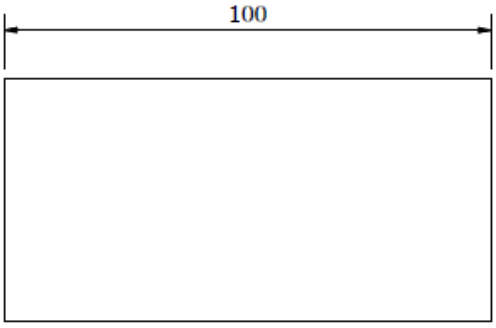


Pictorial



Plan

End Elevation

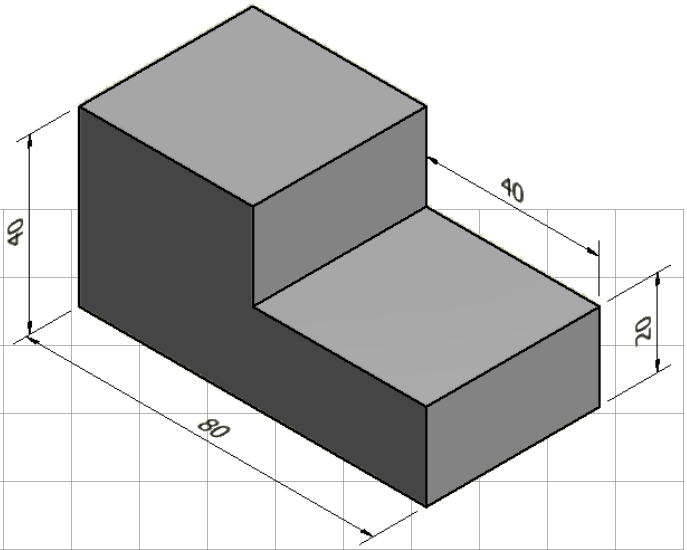


Elevation

Task 3 - Orthographics

Question 1

*An **isometric** of an object has been given below. Using a straight edge, a graphite pencil and the given dimensions complete an **orthographic drawing** of the object. The starting location and label for each view has been given for you. An End Elevation has also been given for you. **Use the square grid to help you, each box is 10mm by 10mm.***



Plan

End Elevation

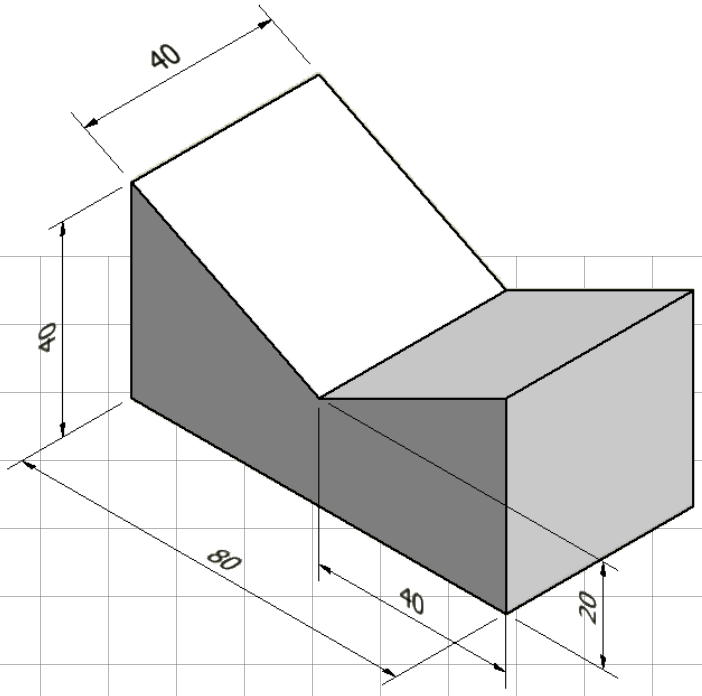
Elevation

End Elevation

Task 3 - Orthographics

Question 2

*An **isometric** of an object has been given below. Using a straight edge, a graphite pencil and the given dimensions complete an **orthographic drawing** of the object. The starting location and label for each view has been given for you. **Use the square grid to help you, each box is 10mm by 10mm.***



Plan

End Elevation

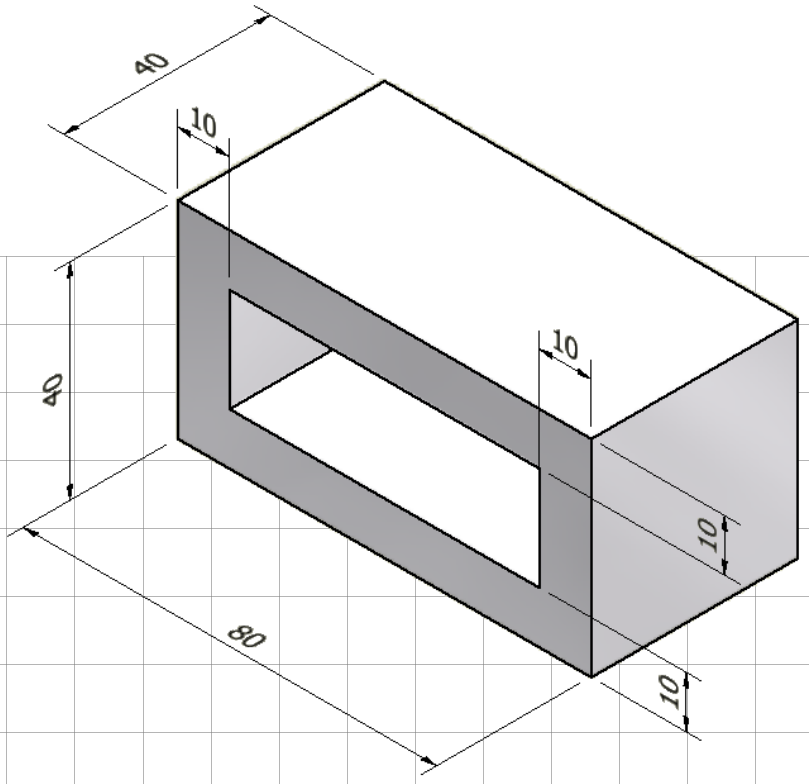
Elevation

End Elevation

Task 3 - Orthographics

Question 3

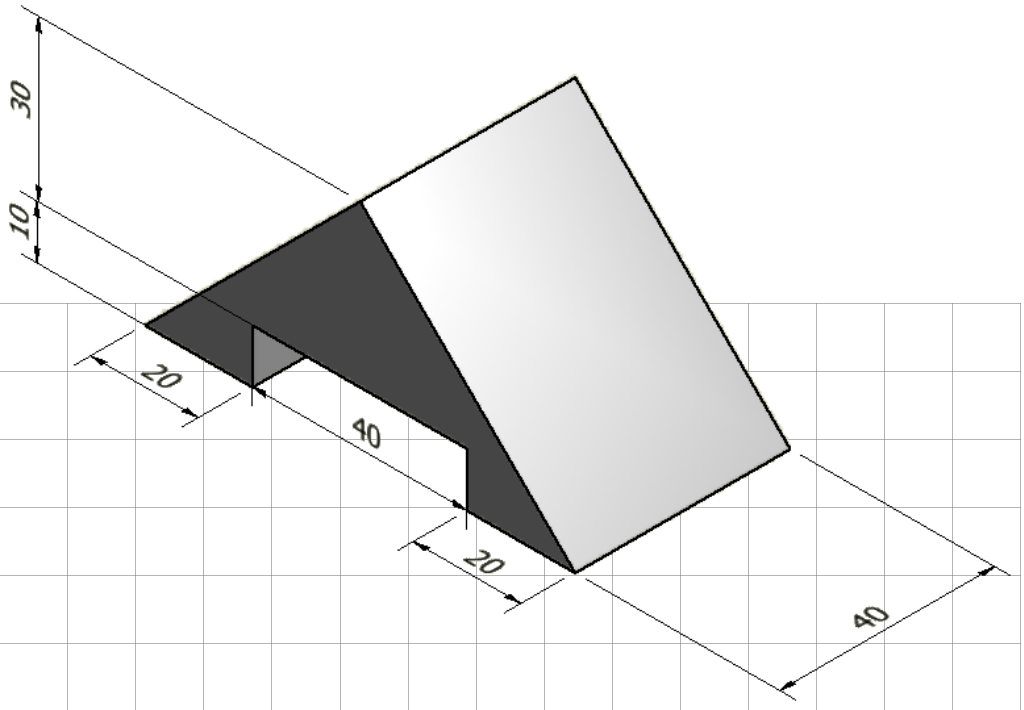
*An **isometric** of an object has been given below. Using a straight edge, a graphite pencil and the given dimensions complete an **orthographic drawing** of the object. The starting location for each view has been given for you. **Use the square grid to help you, each box is 10mm by***



Task 3 - Orthographics

Question 4

*An **isometric** of an object has been given below. Using a straight edge, a graphite pencil and the given dimensions complete an **orthographic drawing** of the object. **Use the square grid to help you, each box is 10mm by 10mm.***



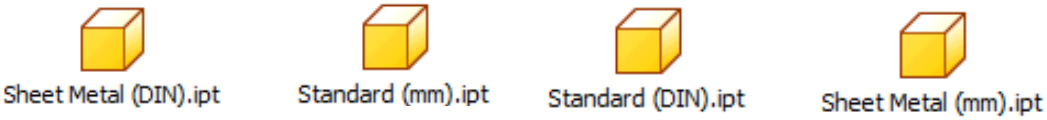
Task 4 - Basics of Autodesk Inventor

Question 1

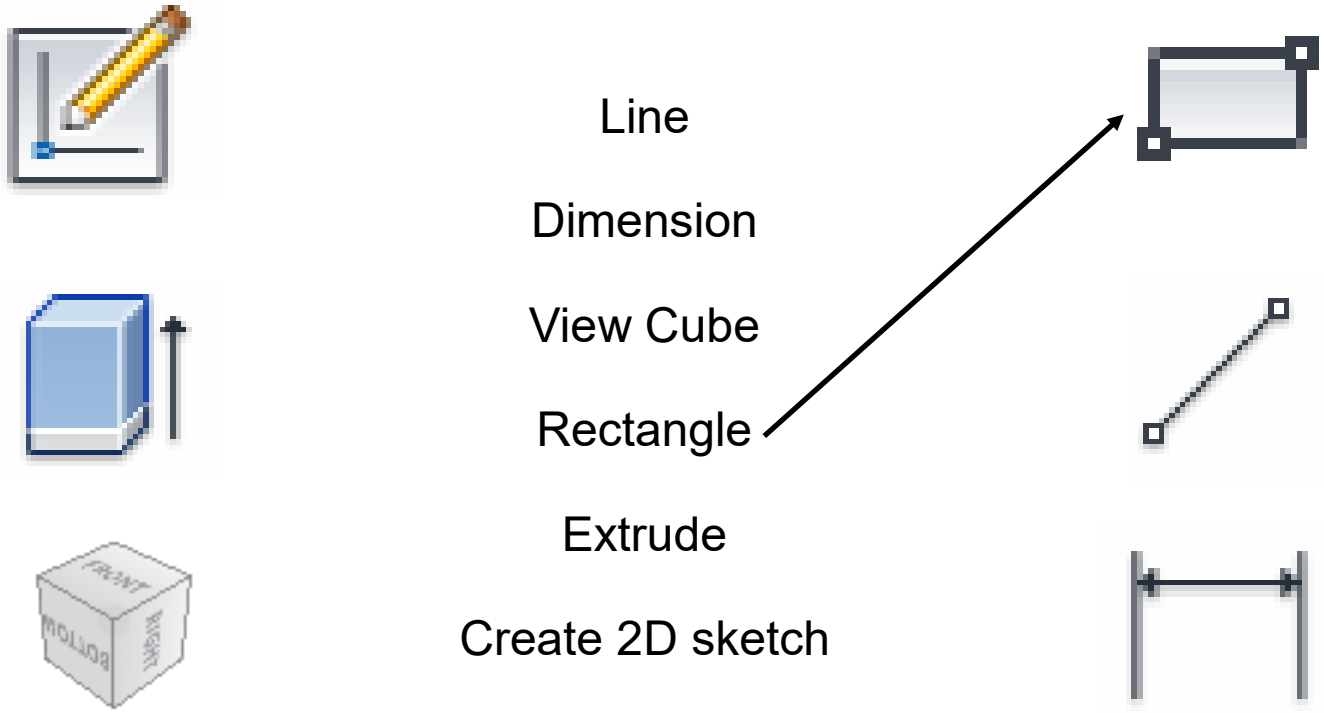
a) ~~*Strikethrough*~~ *the incorrect software types to leave a correct sentence.*

Autodesk Inventor is a Computer Aided Design (CAD)/Computer Aided Graphics (CAG)/Desktop Publishing (DTP) software package.

b) *Circle the correct* ***Part file*** *from the options shown below.*



c) *Match the symbols below with the correct Inventor terminology. An example has been given for you.*



d) *List the* ***keyboard shortcuts*** *for the following tools or processes.*

Dimension: _____

Extrude: _____

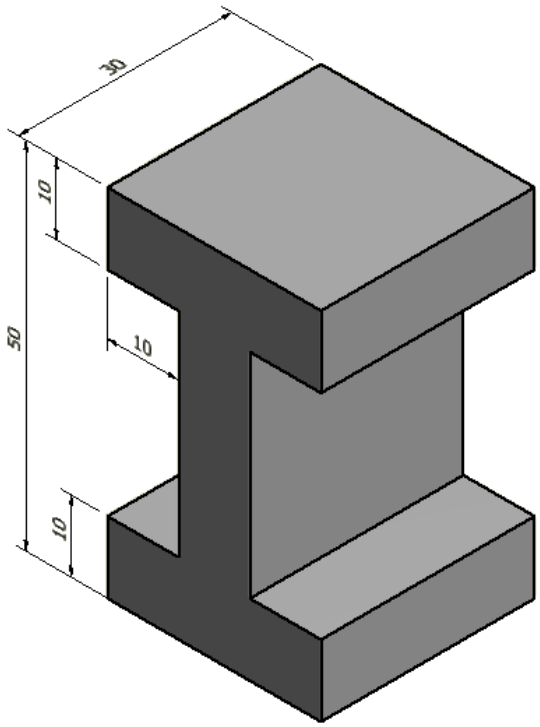
Deselect a tool: _____

Line: _____

Task 5 - Creating models on Autodesk Inventor

Question 1

a) *An isometric of an object created on Inventor is given. Using **Inventor terminology, making reference to the dimensions shown and with the aid of sketches**, describe how you would create this object. Use the word bank to help you.*



Word Bank: create 2D sketch, profile, dimension, rectangle, extrude

Task 9 - Sketching

Question 1

a) *In the boxes below use a graphite pencil to draw two lines to show the difference between a **construction line** and an **outline**.*

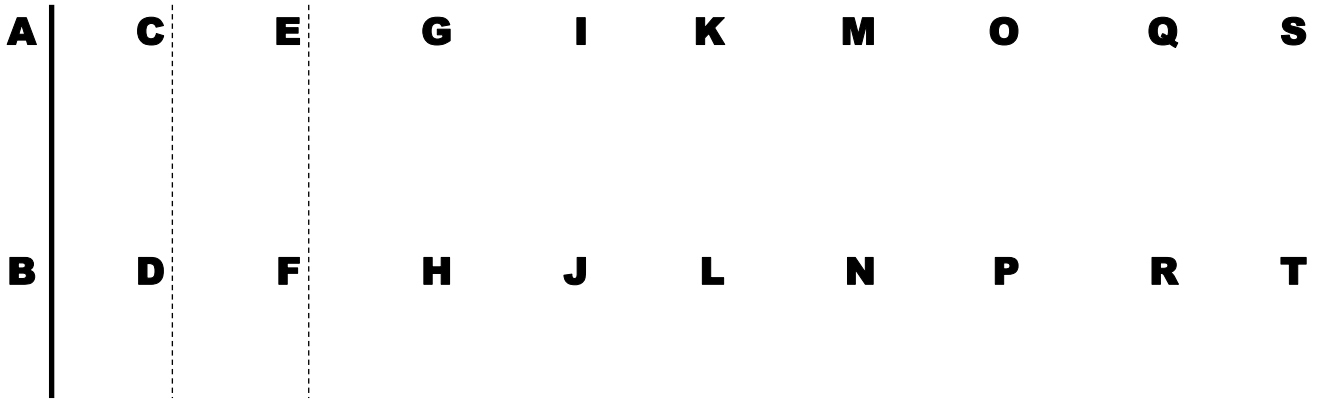
Construction line
Outline

b) ***Parallel lines** are important in 2-point perspective sketching. What are parallel lines?*

_____

_____

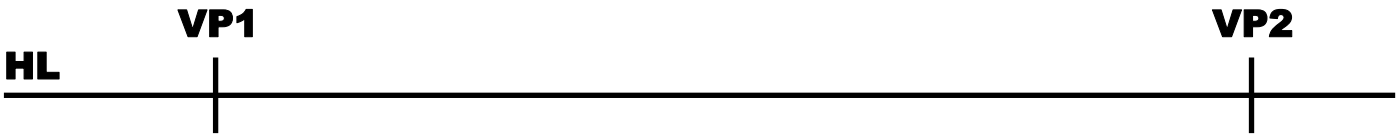
c) *A vertical line labelled A-B is shown below. Complete the remaining lines and ensure all of the lines are **parallel**. Guides have been given for C-D and E-F.*



d) *All 2-point perspective sketches will begin with the setup shown below. What do **HL** and **VP** stand for?*

HL _____

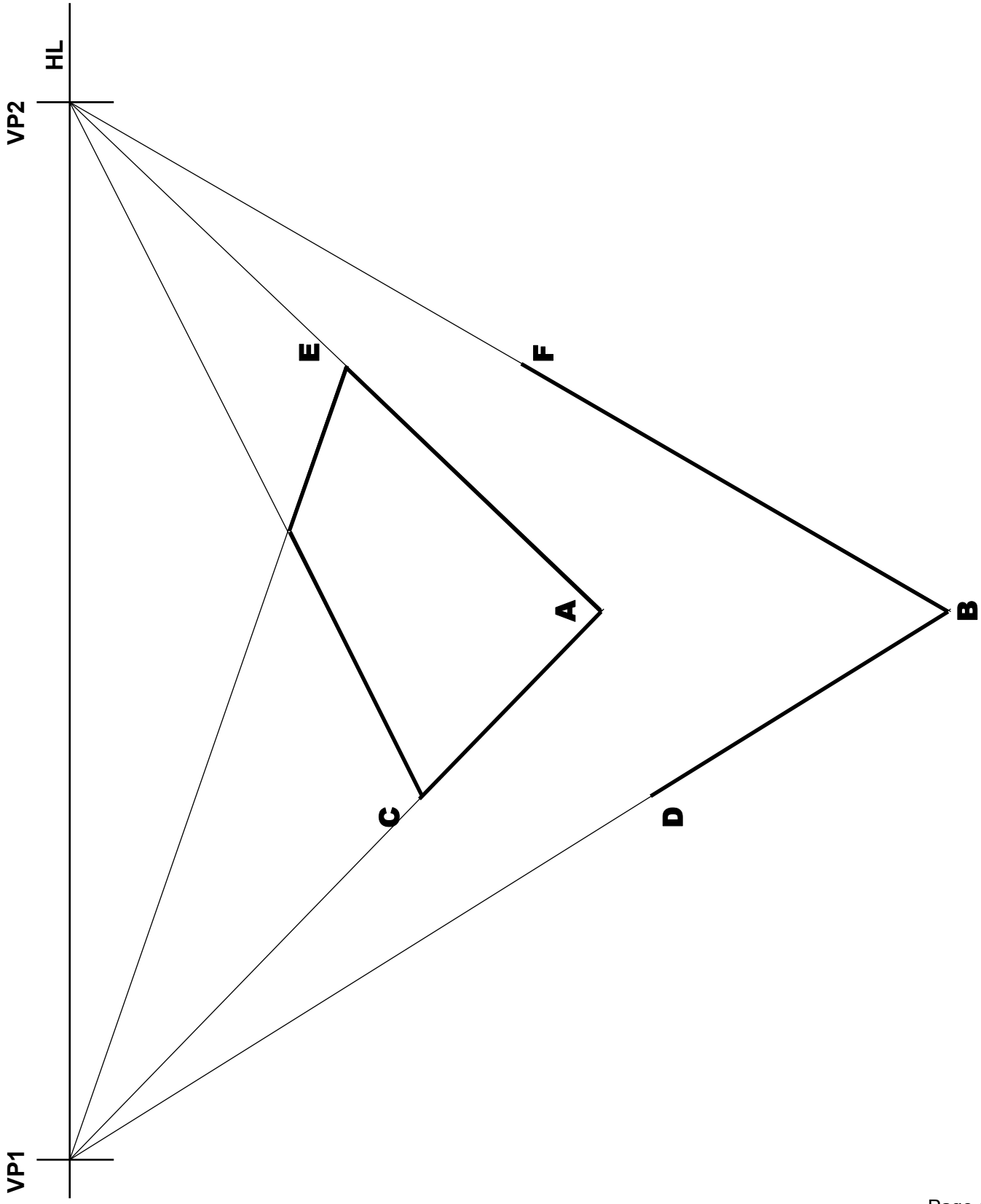
VP _____



Task 10 - Perspective Sketching

Question 1

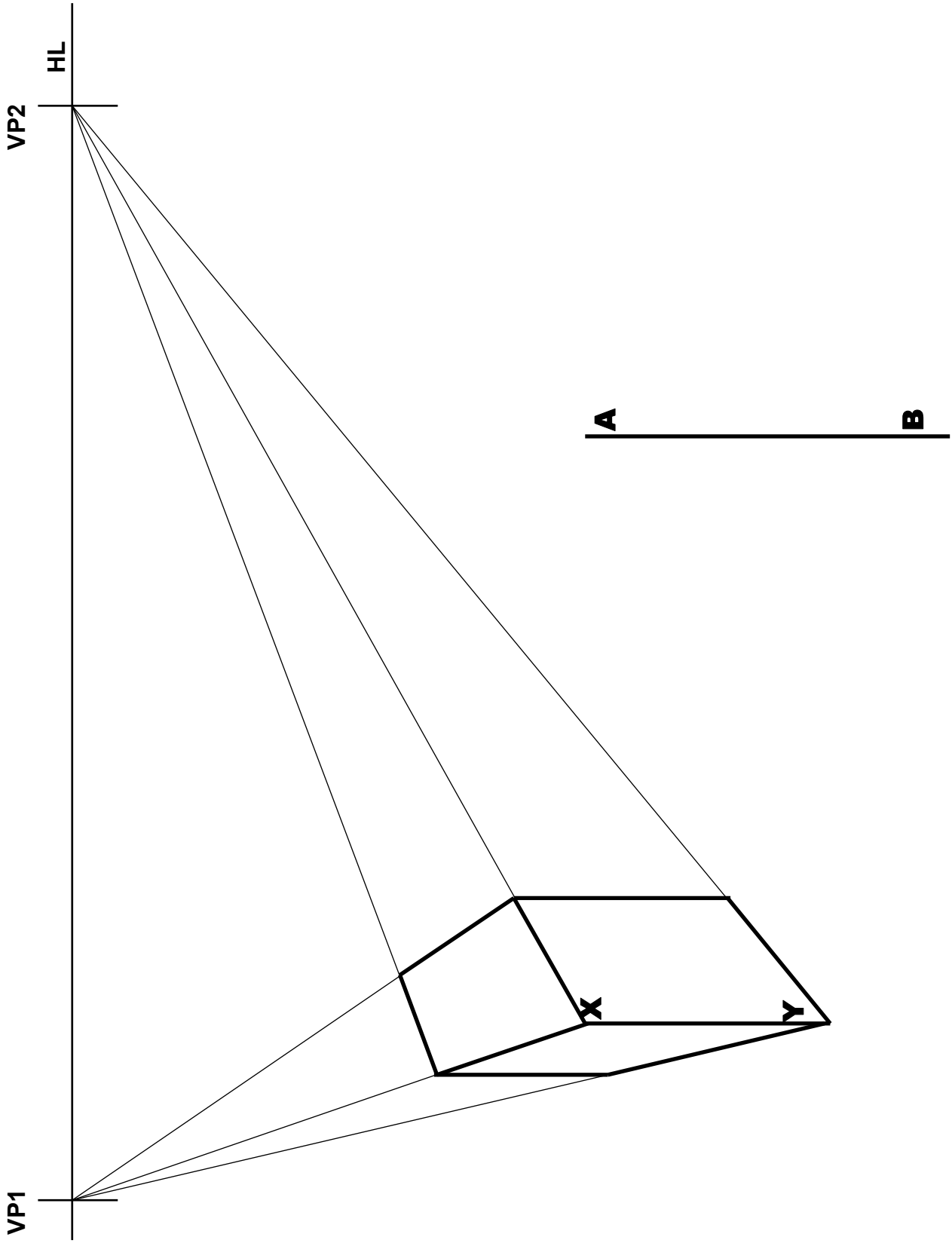
A 2-point perspective sketch is shown below. Using a pencil ***outline three parallel lines*** *between A-B, C-D and E-F to complete the rectangular prism.* ***Do not use a ruler, complete this freehand, remember sketches aren't perfect!***



Task 10 - Perspective Sketching

Question 2

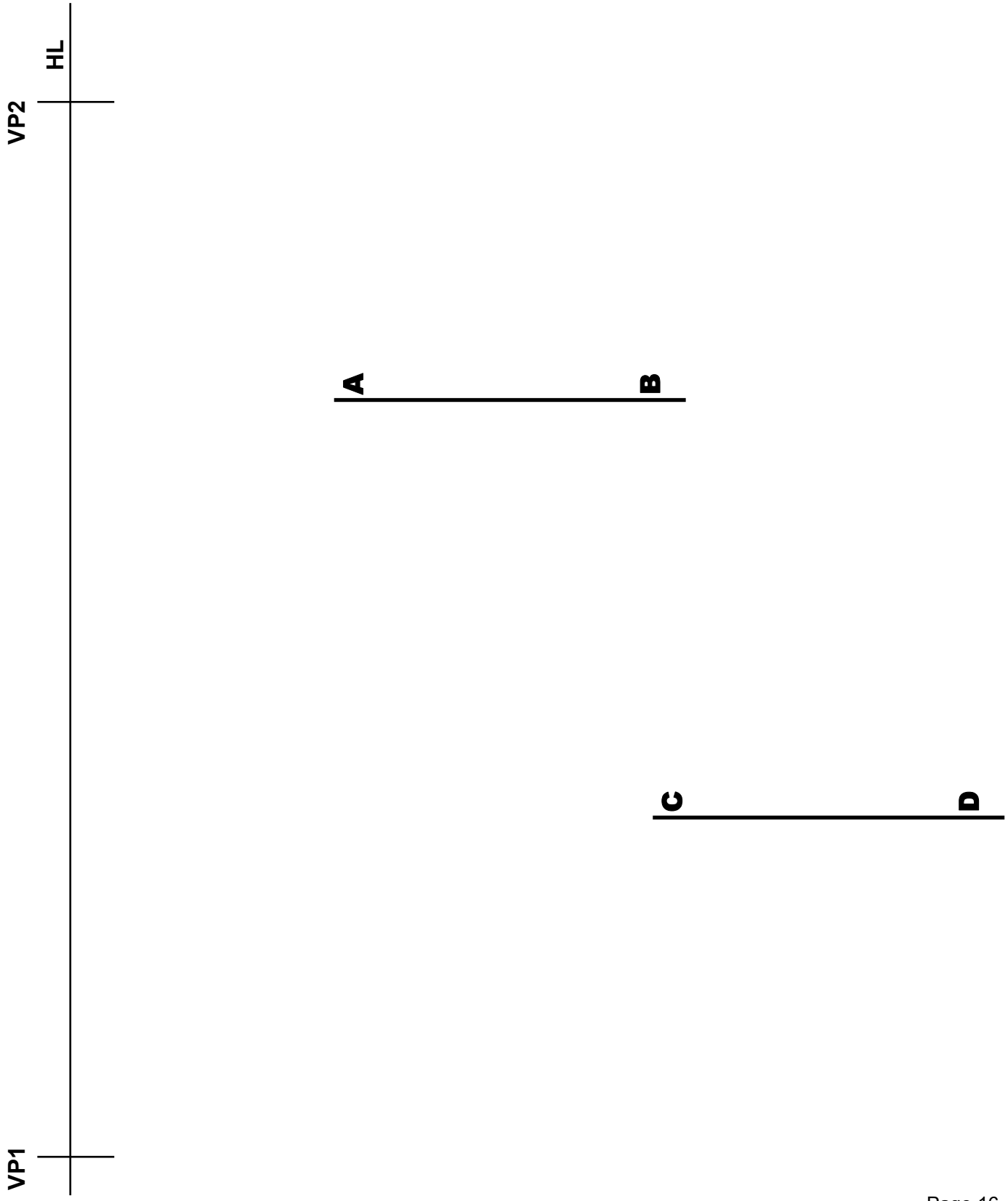
*Using the given **horizon line** and **vanishing points**, sketch a rectangular prism in 2-point perspective using line **A-B** as your starting edge. An example is shown using X-Y as its starting edge. **Do not use a ruler, complete this freehand, remember sketches aren't perfect!***



Task 10 - Perspective Sketching

Question 3

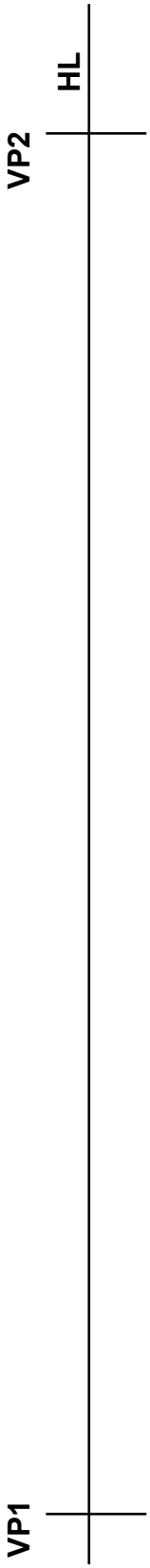
*Using the given **horizon line** and **vanishing points**, sketch 2 rectangular prisms in 2-point perspective using lines **A-B** and **C-D** as your starting edges. **Do not use a ruler, complete this freehand, remember sketches aren't perfect!***

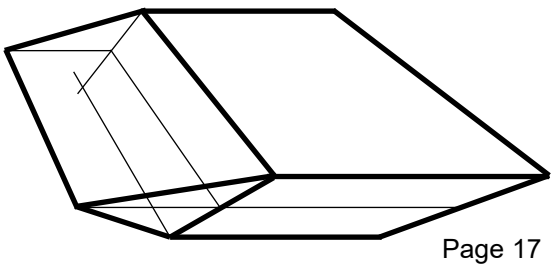


Task 10 - Perspective Sketching

Question 4

*Using the given **horizon line** and **vanishing points**, sketch a house in 2-point perspective. A small example is shown. **Do not use a ruler, complete this freehand, remember sketches aren't perfect!***





Task 11 - Colour Theory

Question 1

a) *Name the three **primary** colours.*

i) _____

ii) _____

iii) _____

b) *Name the three **secondary** colours.*

i) _____

ii) _____

iii) _____

c) *Which two **primary** colours mix to create....*

i) ...orange? _____

ii) ...green? _____

d) *What is a **tertiary** colour?*

_____

_____

e) *Give two examples of **tertiary** colours.*

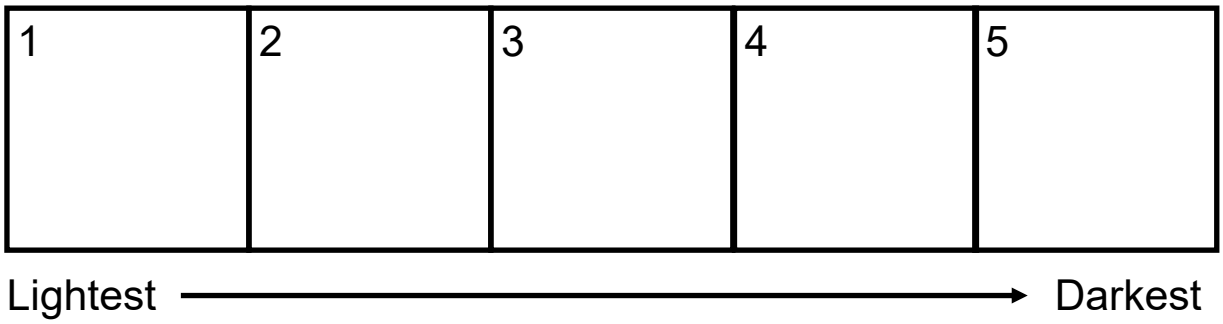
i) _____

ii) _____

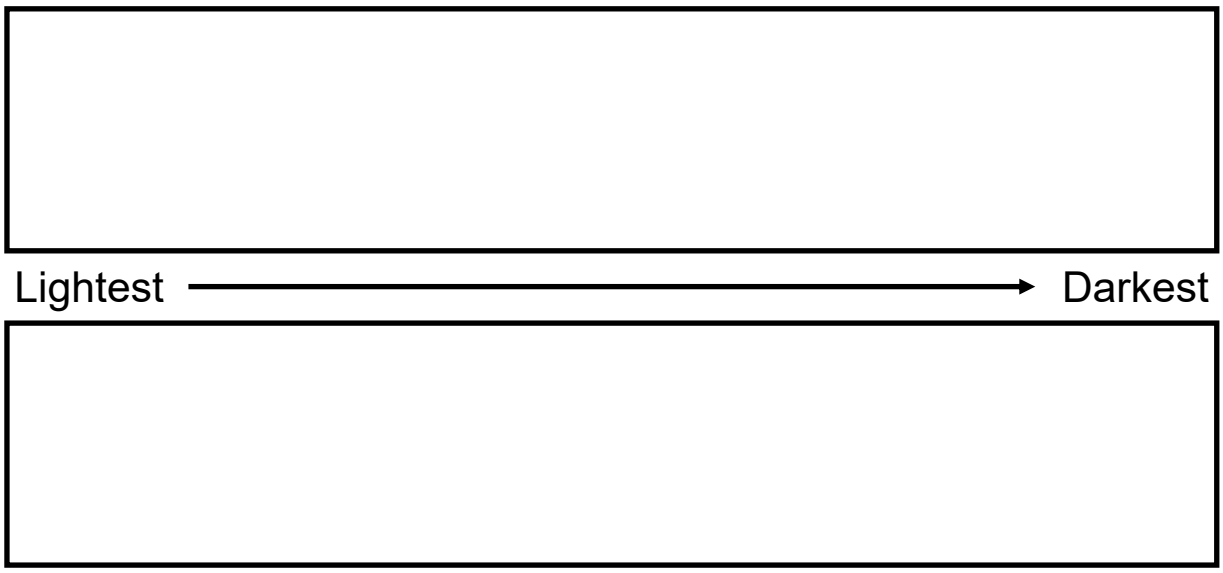
Task 12 - Rendering

Question 1

a) *Using a graphite pencil render the boxes numbered 1 to 5 shown below. Box 1 should be the lightest and each following box should be darker than the box before it.*



b) *Using a graphite or coloured pencil, render the two boxes below. Begin lightly on the left and get darker towards the right.*



c) *The two boxes you have just rendered represent a scale. What do we call this kind of scale?*

_____

d) *Why do we begin rendering lightly and get darker as we go?*

_____

_____

Task 12 - Rendering

Question 2

Various objects are shown below. Using a graphite or coloured pencil render these objects according to where the light source is coming from.