

The figure above shows the elevation of two spheres and a cone in contact with one another
 I. Draw the elevation and plan of the solids showing all points of contact



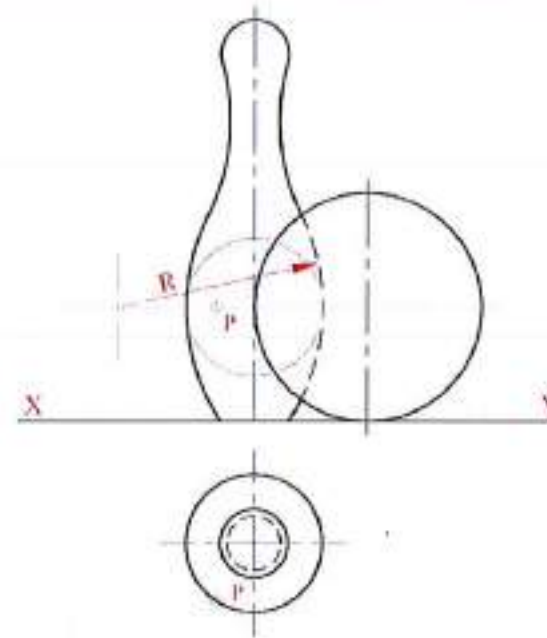
Design & Communication Graphics
 Solids in Contact 10

Name: _____ Date: _____

A-2. The graphic below shows a bowling ball and pins.

The drawing on the right shows the elevation and incomplete plan of one of the pins and the bowling ball in contact with each other.

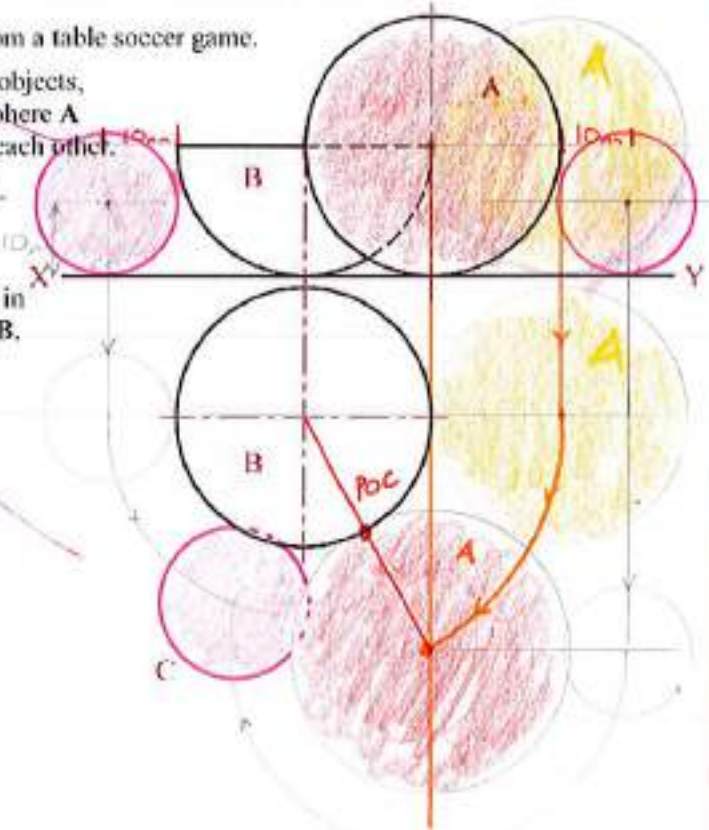
- Complete the plan of the solids in contact.
- Draw the plan of a right cylinder which stands upright on the horizontal plane. The top of the cylinder touches the pin at the point P and also touches the ball.



A-4. The graphic below shows a figure and a ball from a table soccer game.

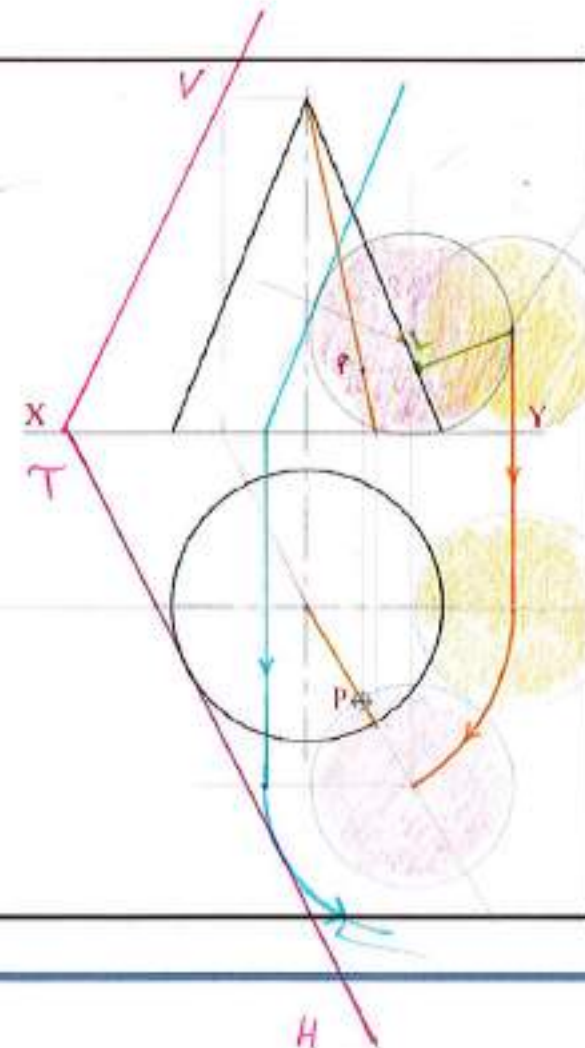
The drawing on the right, which represents the objects, shows the elevation and incomplete plan of a sphere A and a hemisphere B, which are in contact with each other.

- Complete the plan of both solids in contact.
- Draw the plan of another sphere, of diameter 20mm, which rests on the horizontal plane, in position C, so that it is in contact with the sphere A and hemisphere B.



A-4. The drawing on the right shows the plan and elevation of a right cone. A 3D graphic is also given below. A point P on the curved surface is shown in the plan.

- Locate point P in elevation and draw the projections of a sphere which rests on the horizontal plane and which touches the cone at point P.
- Determine the traces of a plane which is tangential to the cone and the sphere as shown in the 3D graphic.



Notes:

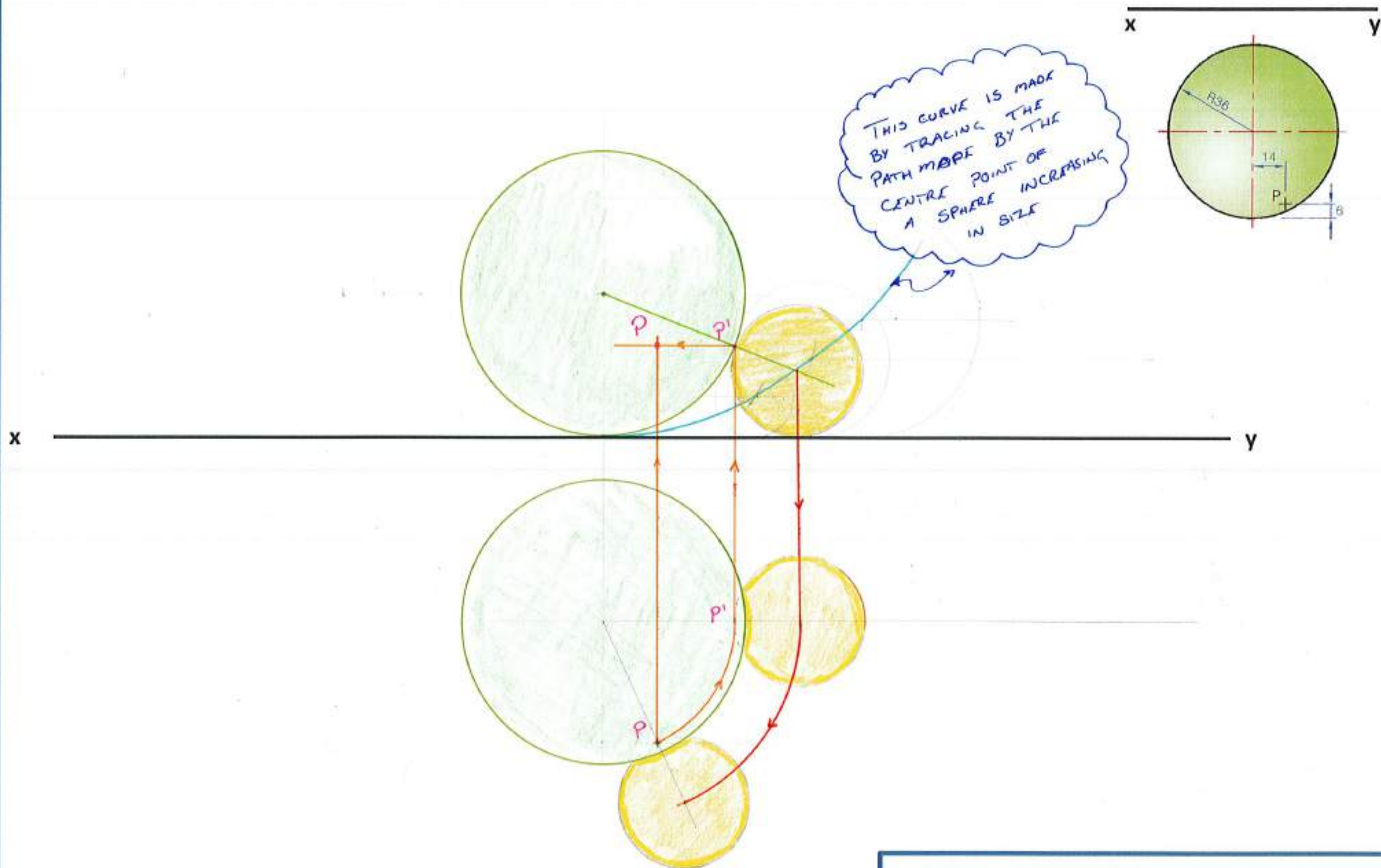


Design & Communication Graphics

Solids in Contact 9

Past Questions

Name: _____ Date: _____



The figure above shows the plan of a sphere with a point P on its underside.

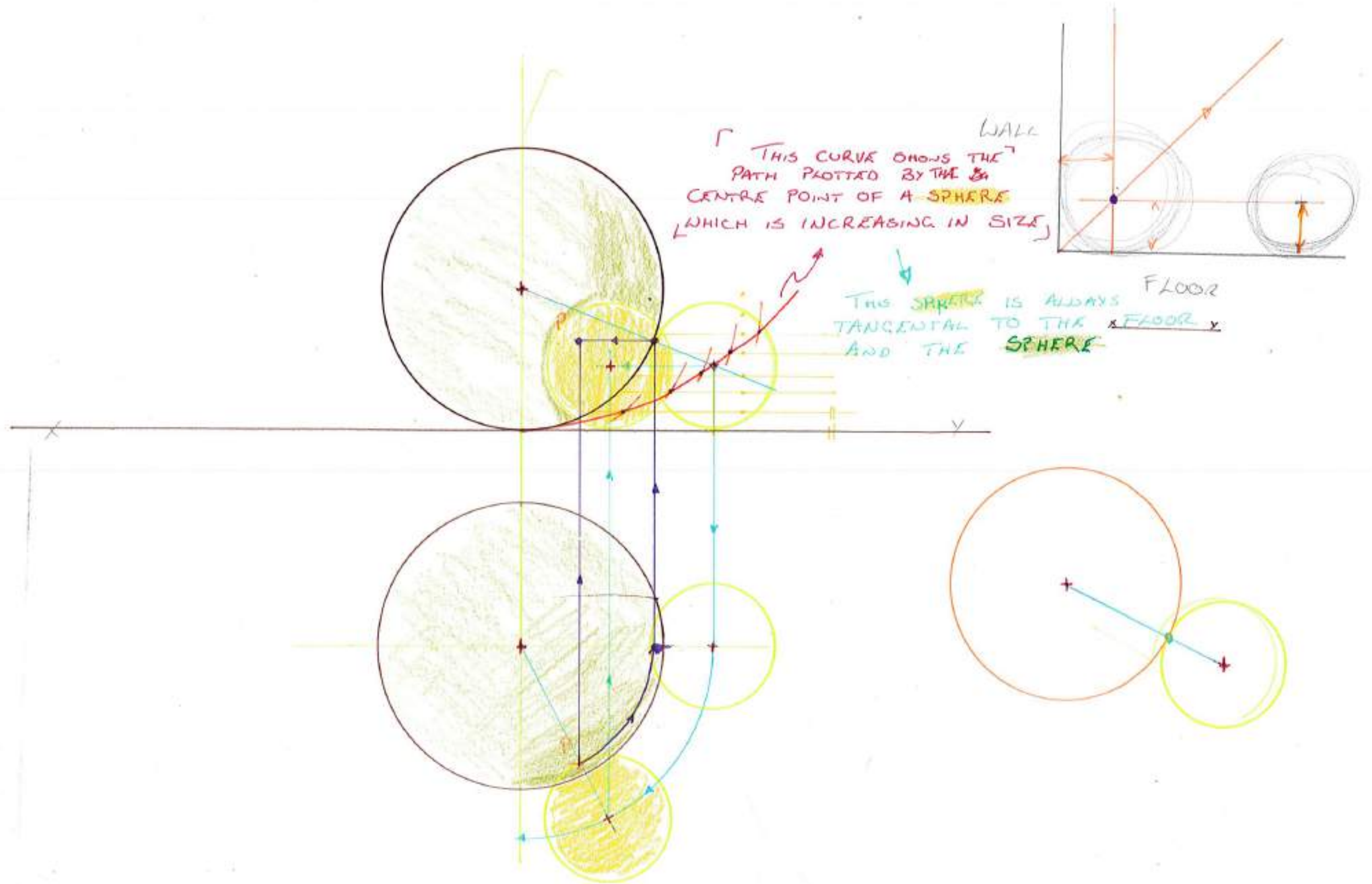
- I. Draw the plan and elevation of the sphere and find the projections of point P
- II. Find the projections of the sphere which rests on the horizontal plane and has a point P as its point of contact



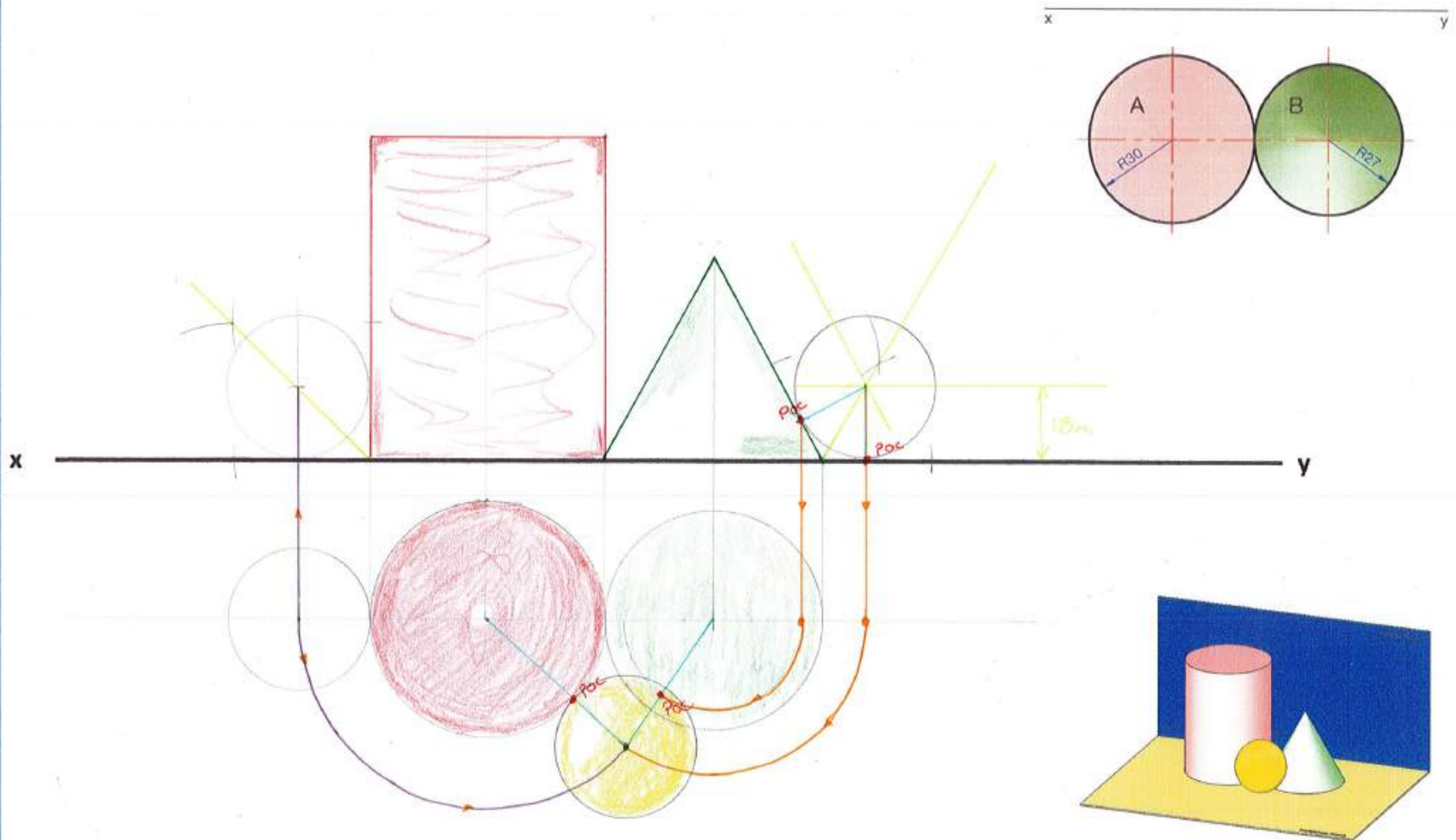
Design & Communication Graphics
Solids in Contact 9

Name: _____ Date: 8/01/19

+



55

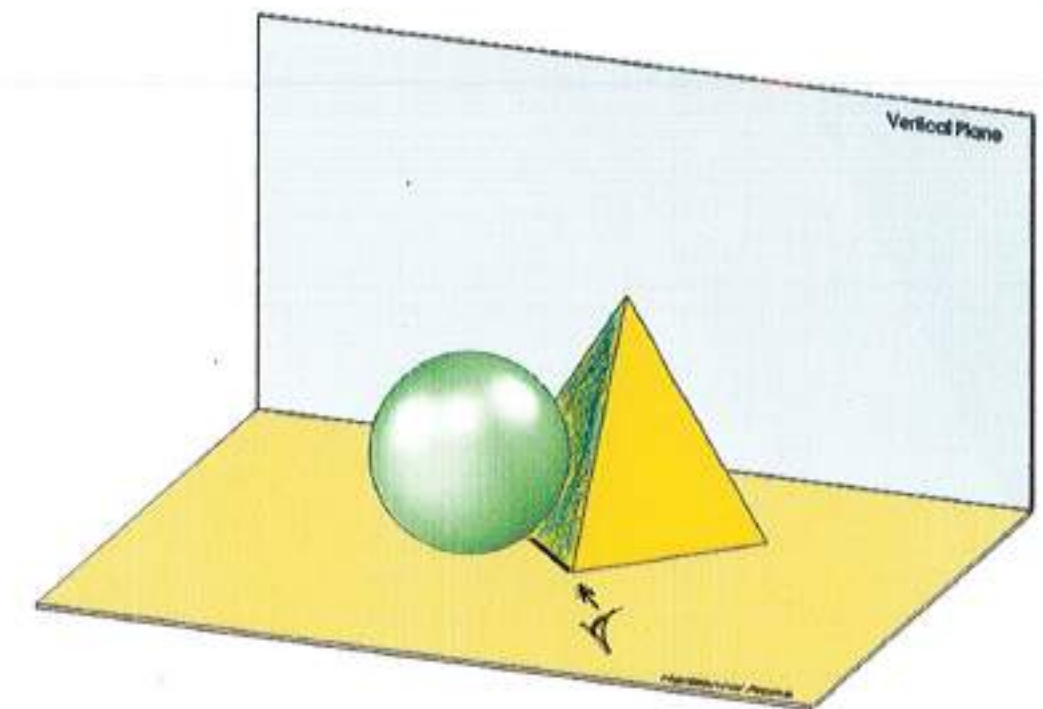
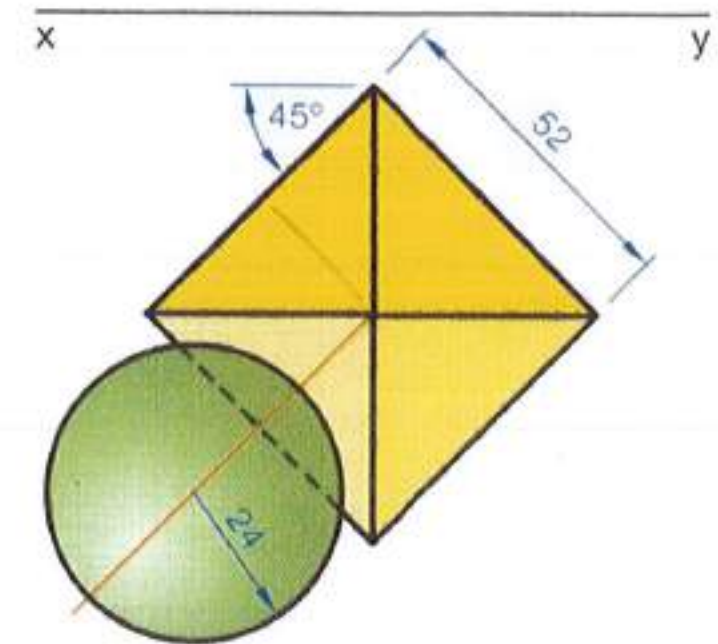


The figure above shows the plan of a cylinder A and a cone B. Both solids rest on the horizontal plane. The cylinder has an altitude of 80mm and the cone has an altitude of 50mm. A sphere C of radius 18mm is placed so that it touches the horizontal plane and both solids. Draw the plan and elevation of these solids and show the points of contact.

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Solids in Contact 7

Name: _____ Date: 19-12

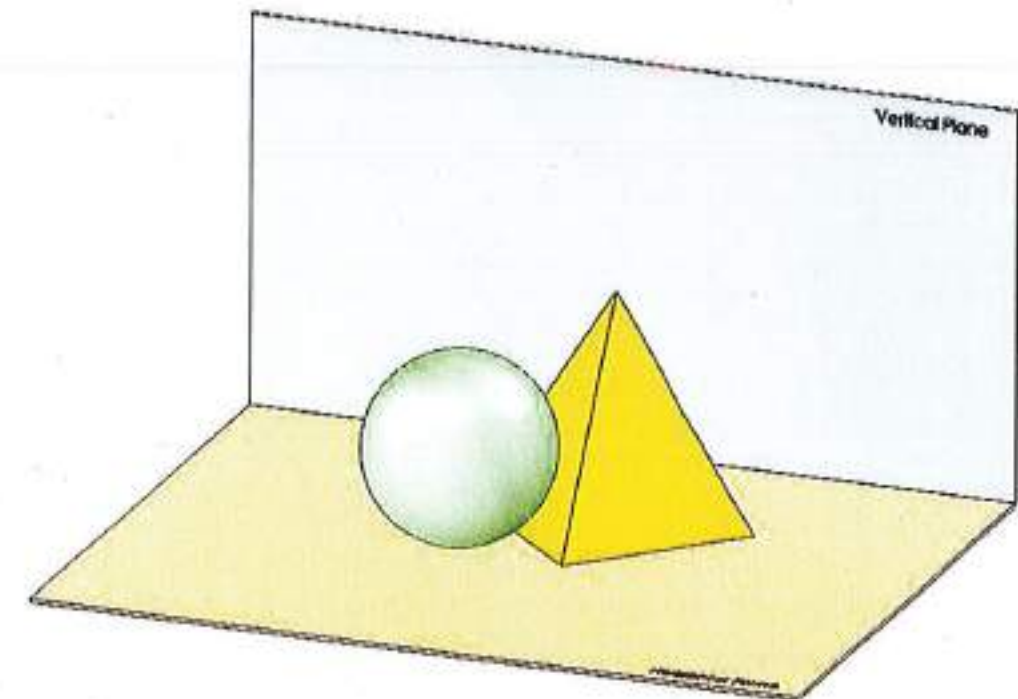
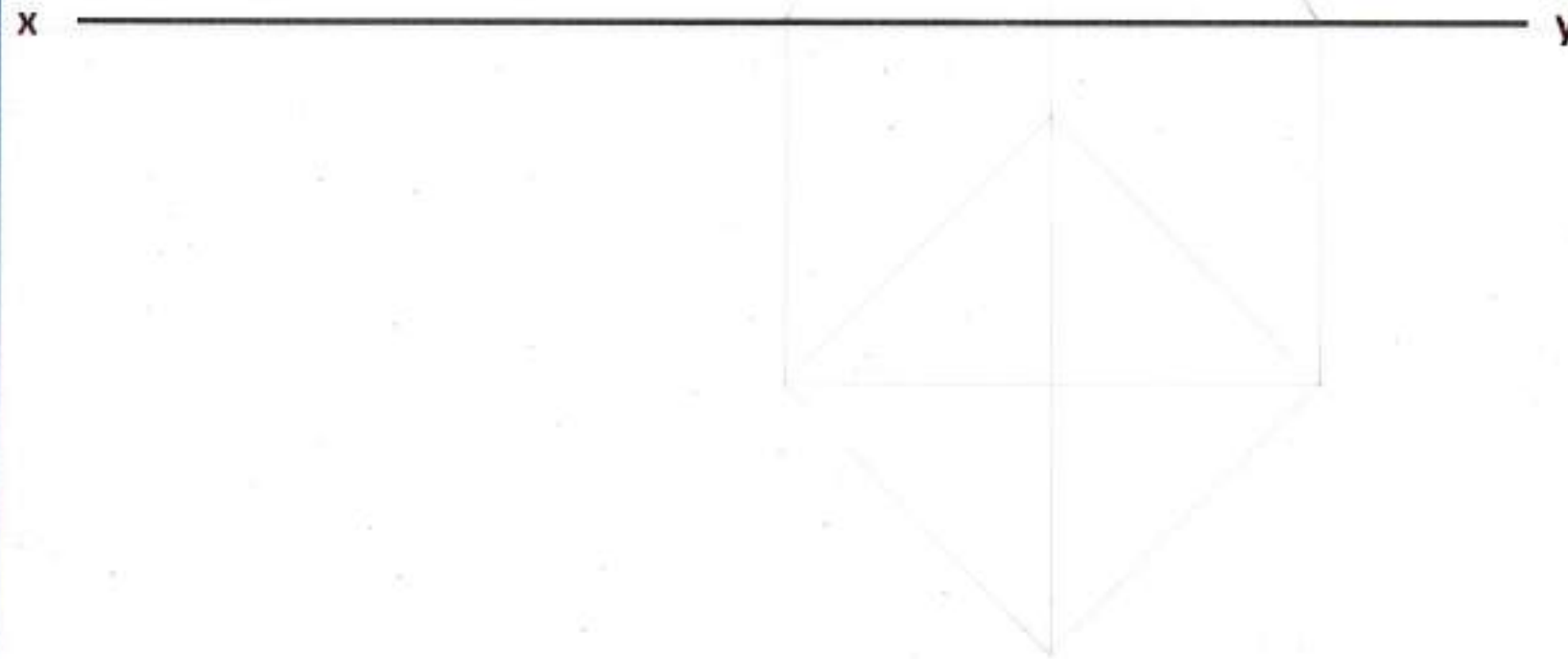
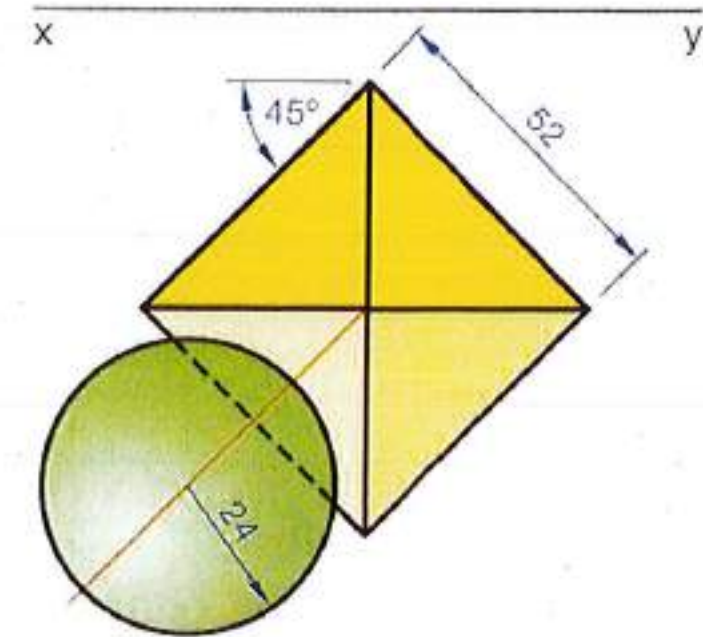
The plan of a square based pyramid and a sphere, resting on the horizontal plane, are shown. They are in contact with each other. Draw the plan and elevation of the solids showing the point of contact. The pyramid has an altitude of 58mm.



Design & Communication Graphics
Solids in Contact 6

Name: _____ Date: 14-12-17.

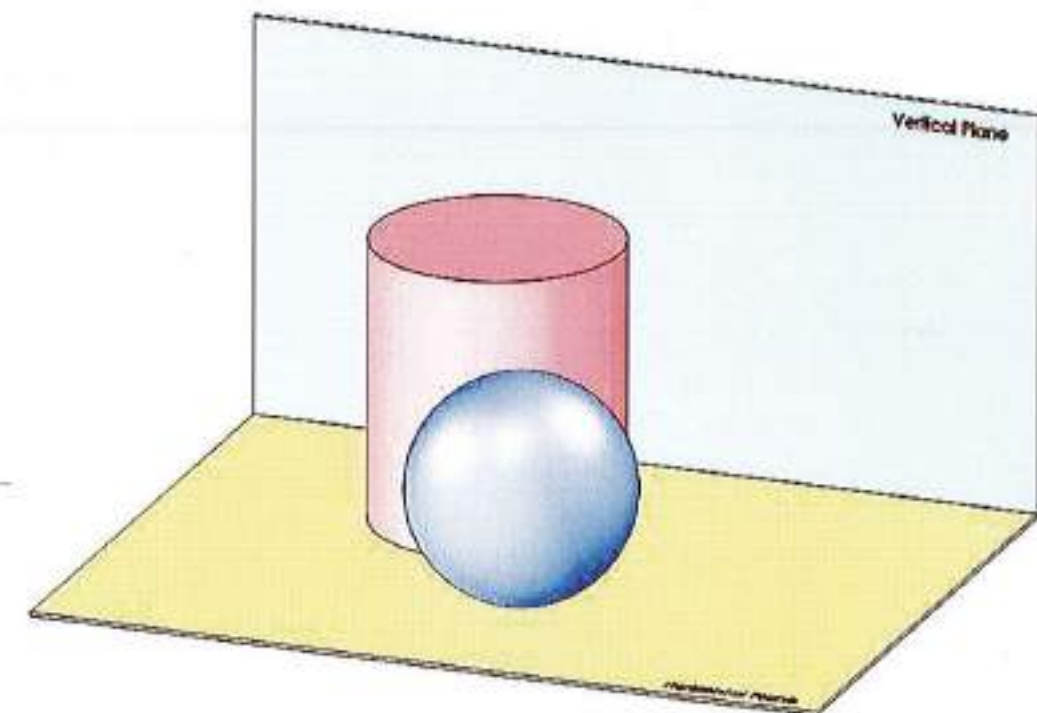
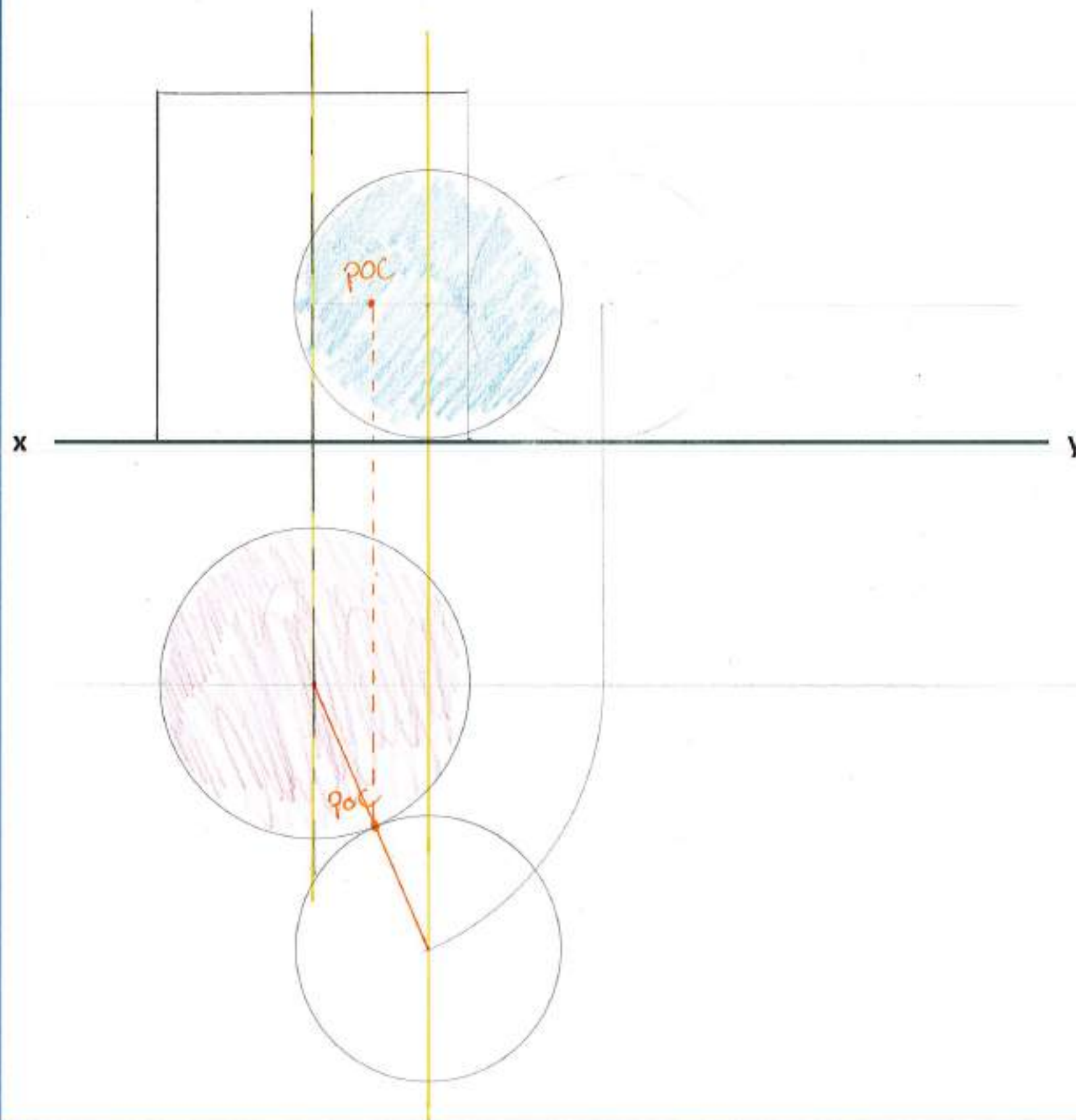
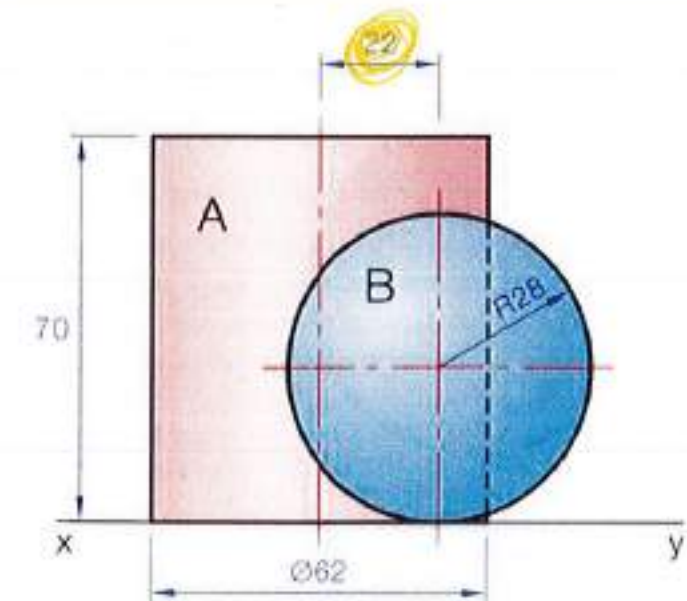
The plan of a square based pyramid and a sphere, resting on the horizontal plane, are shown. They are in contact with each other. Draw the plan and elevation of the solids showing the point of contact. The pyramid has an altitude of 58mm.



Design & Communication Graphics
Solids in Contact 7

Name: _____ Date: _____

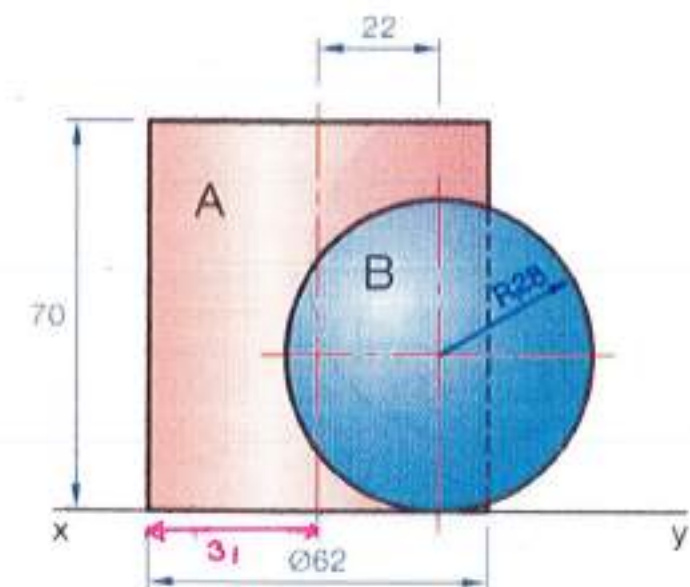
Shown is the elevation of a cylinder A and a sphere B. Both solids are in contact with each other and rest on the horizontal plane. Draw the elevation and plan of the solids and the point of contact.



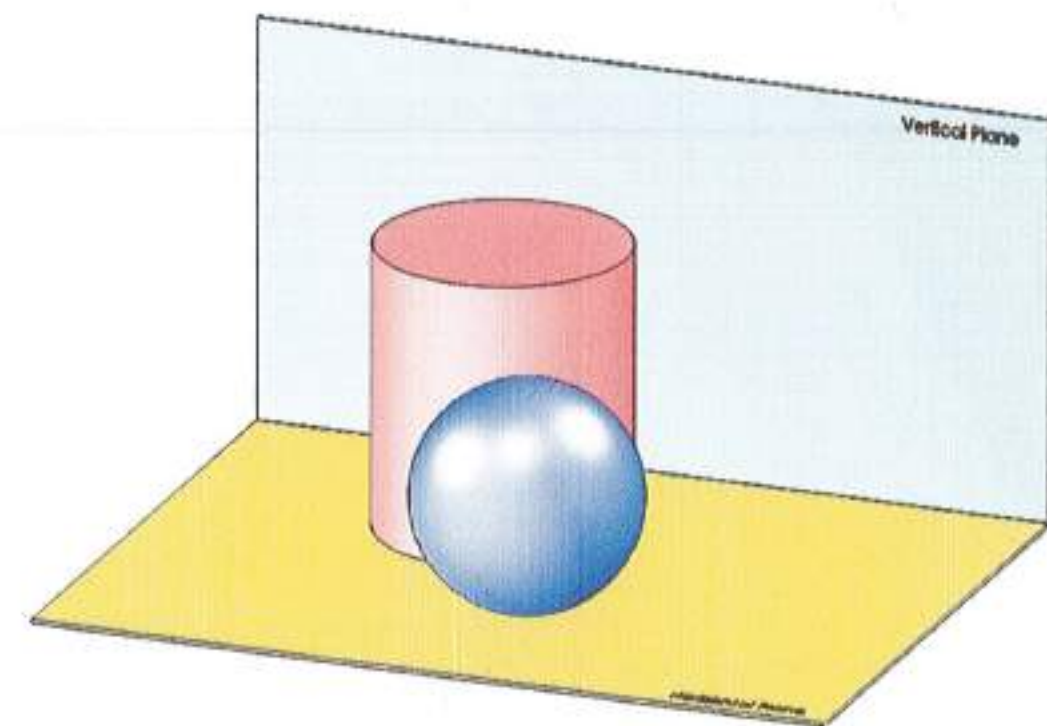
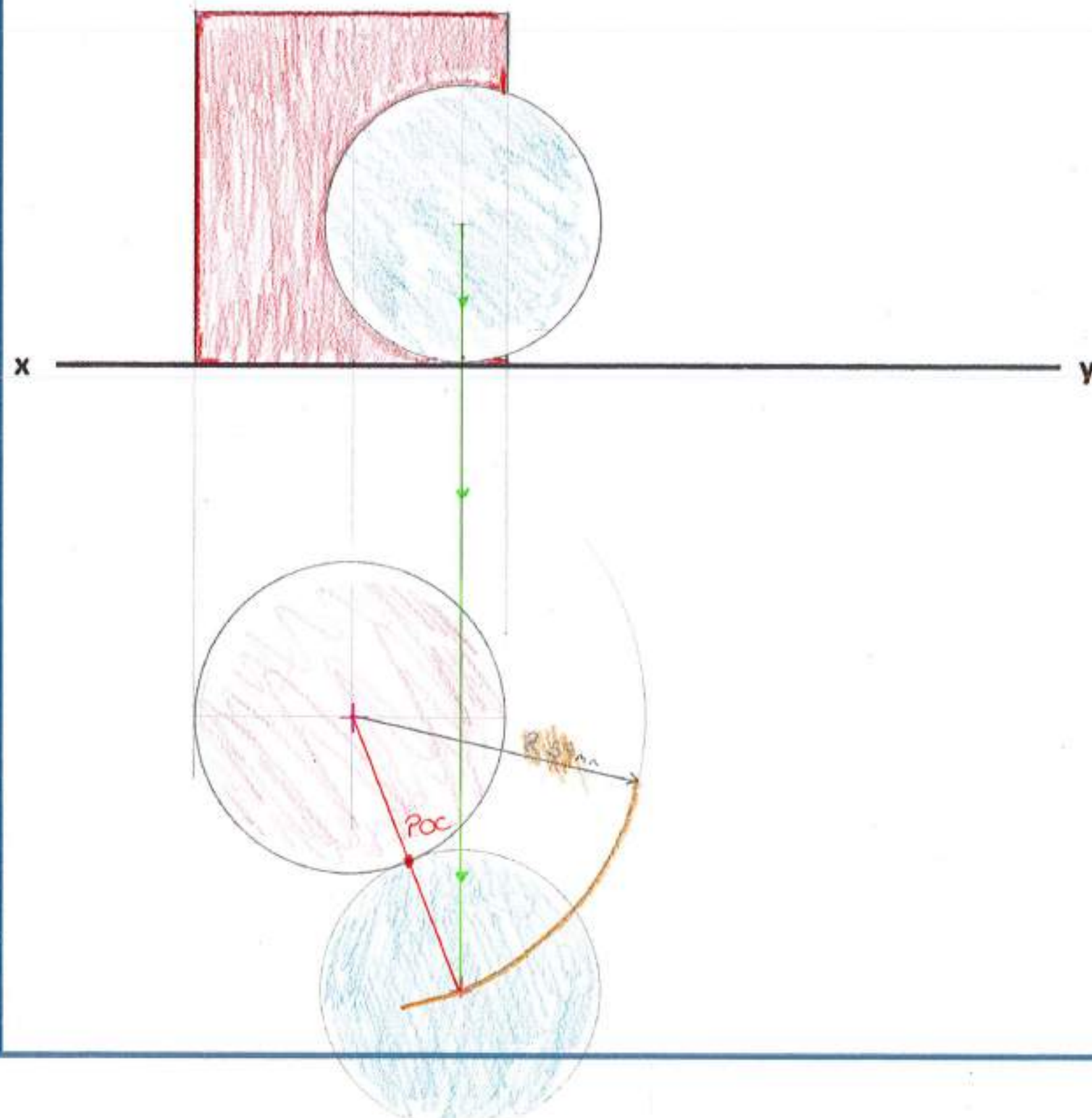
Design & Communication Graphics
Solids in Contact 6

Name: _____ Date: _____

Shown is the elevation of a cylinder A and a sphere B. Both solids are in contact with each other and rest on the horizontal plane. Draw the elevation and plan of the solids and the point of contact.



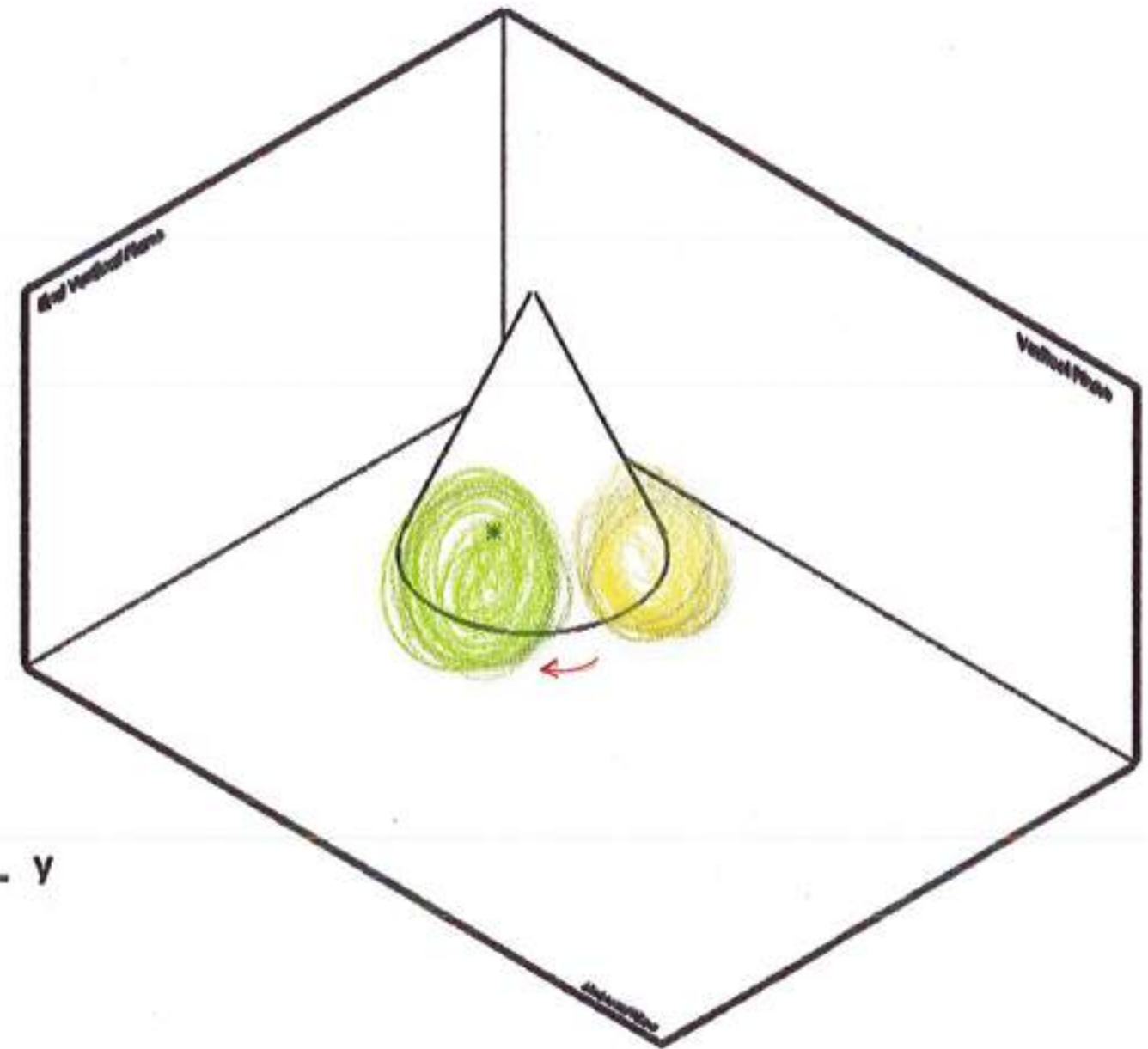
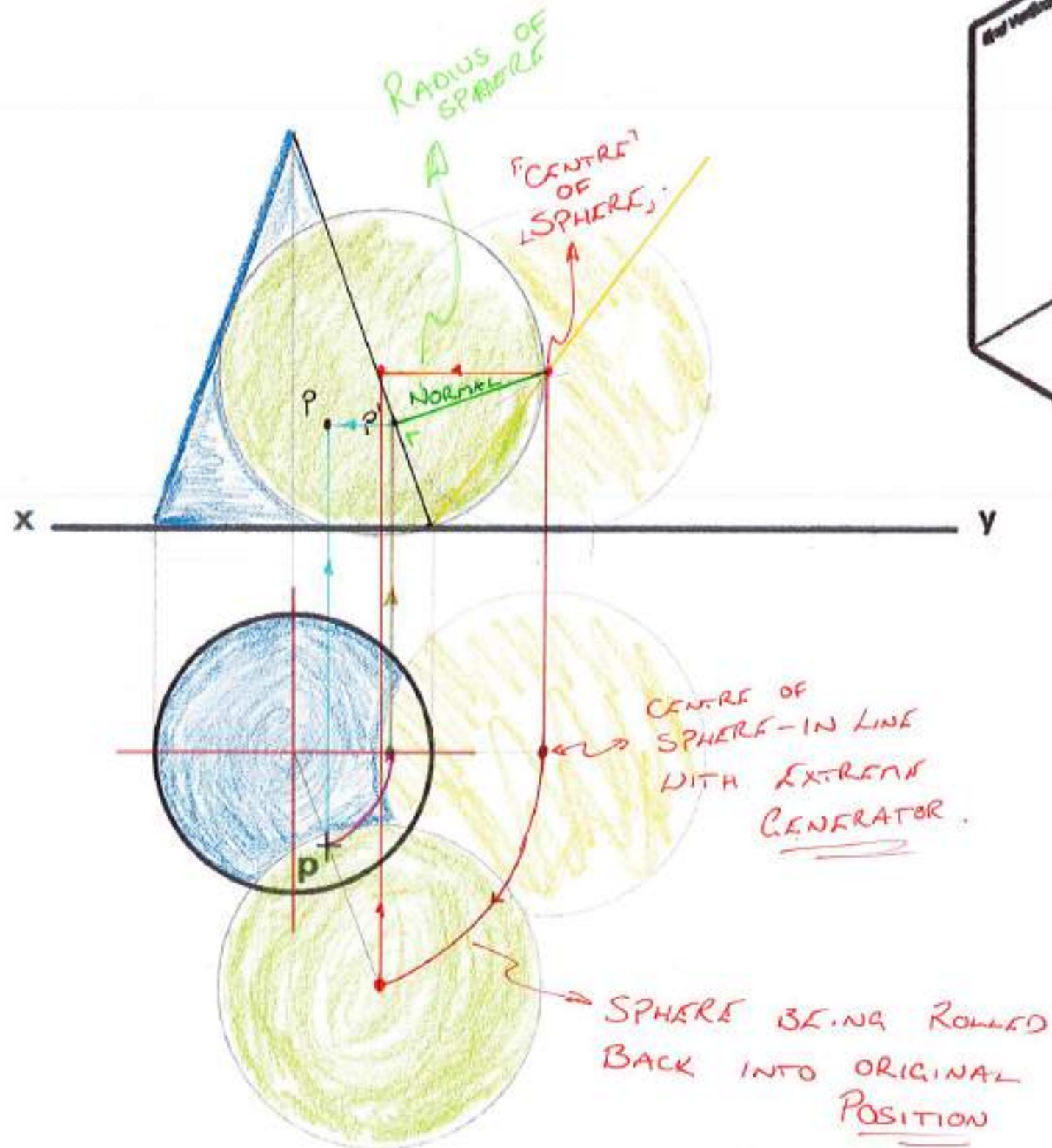
$$31 + 28 = 59$$



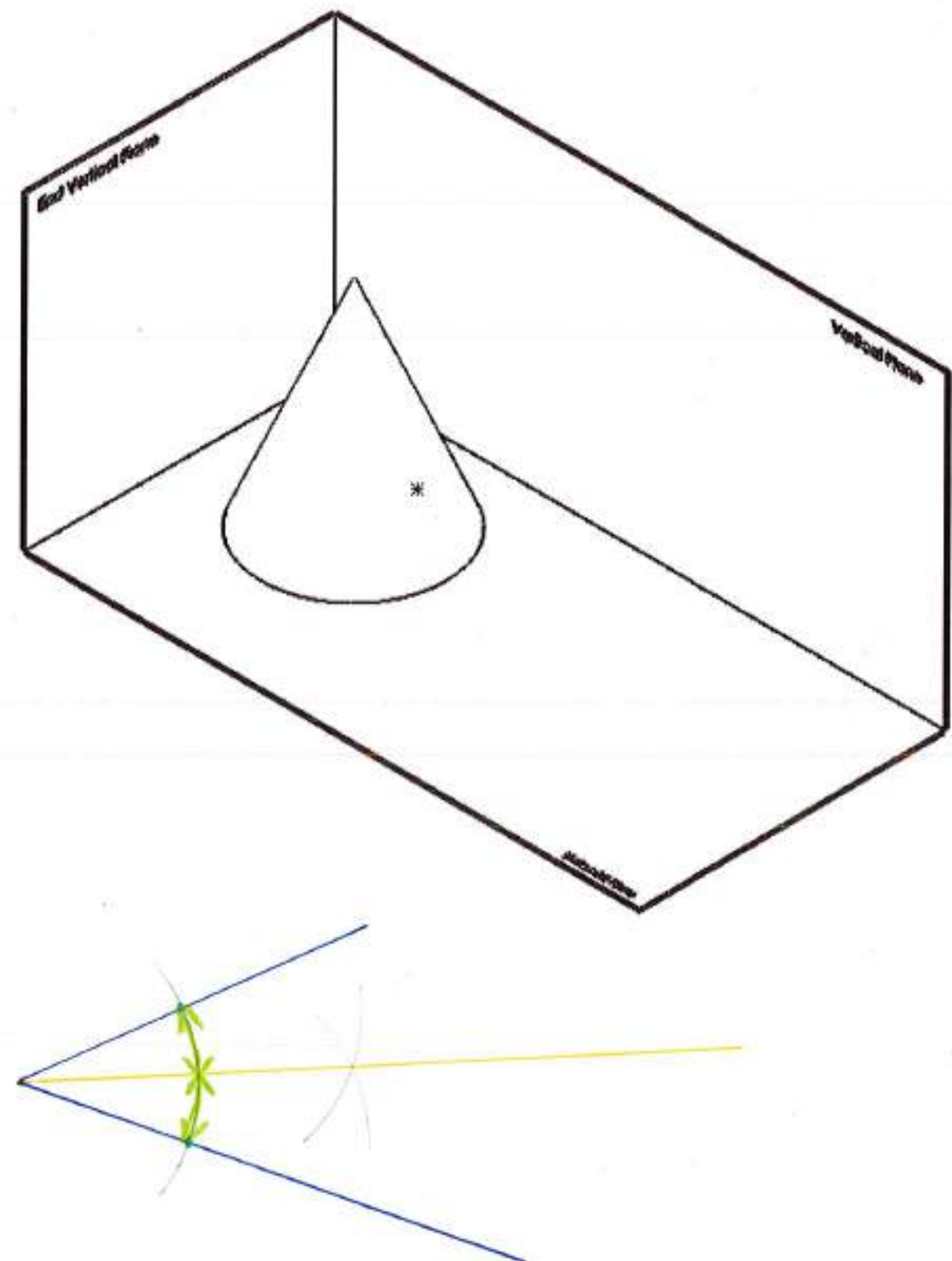
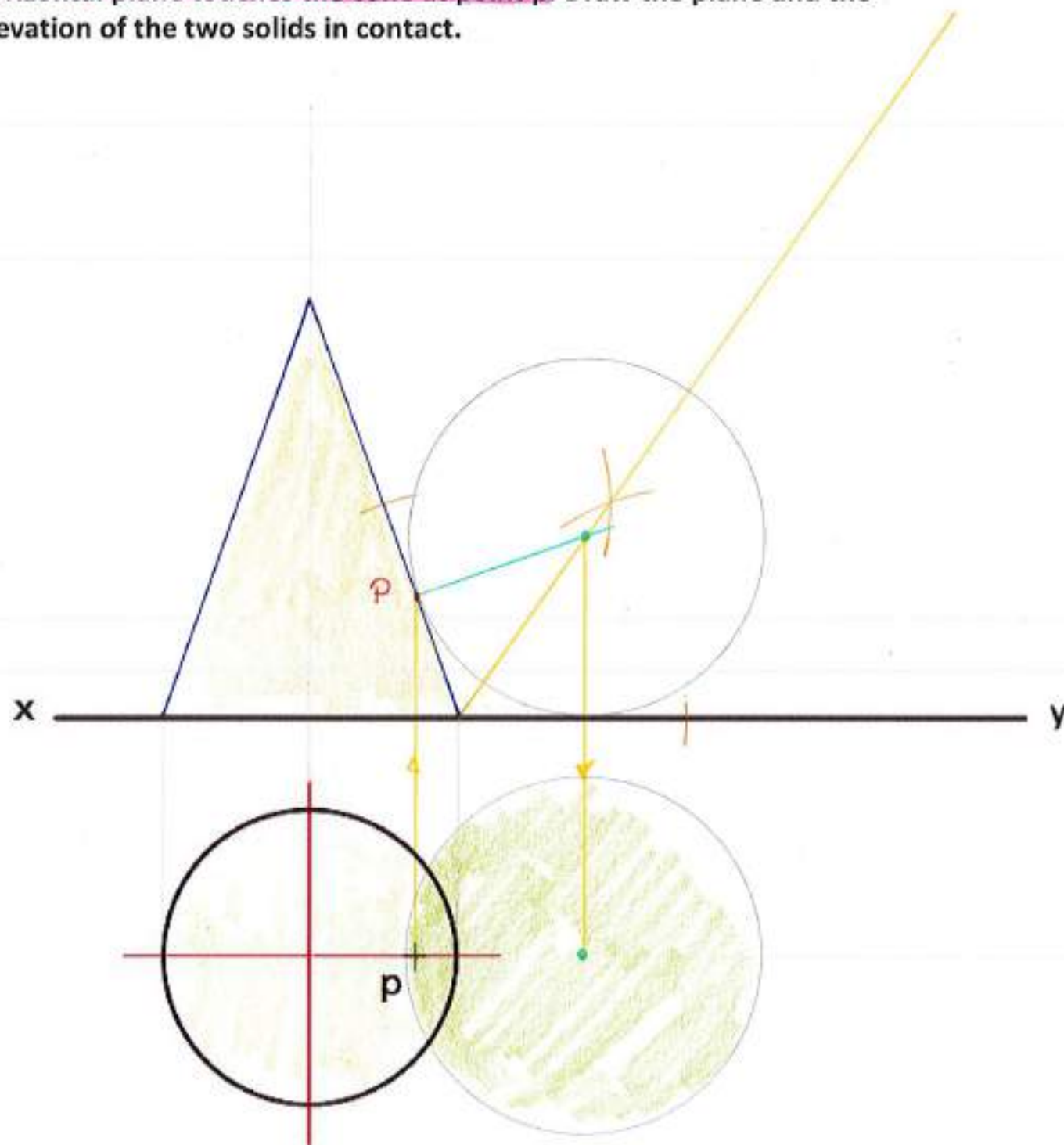
Design & Communication Graphics
Solids in Contact 5

Name: _____ Date: 14-12-19.

The plan of a cone of altitude 70mm is shown below. Also shown is a point (p) on the surface of the cone. A sphere which rests on the horizontal plane touches the cone at point p. Draw the plan and the elevation of the two solids in contact.



The plan of a cone of altitude 70mm is shown below. Also shown is a point (p) on the surface of the cone. A sphere which rests on the horizontal plane touches the cone at point p. Draw the plane and the elevation of the two solids in contact.

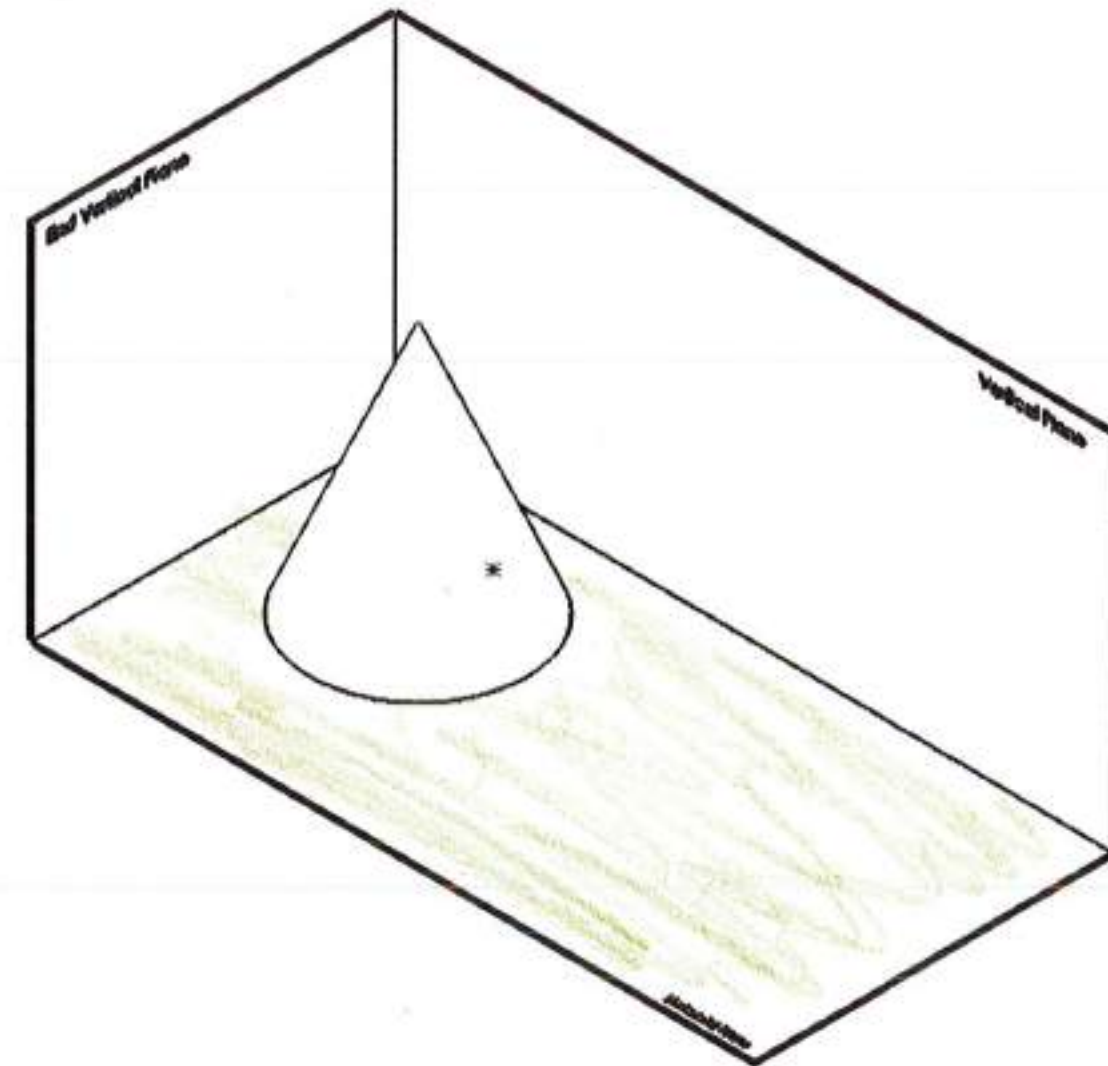
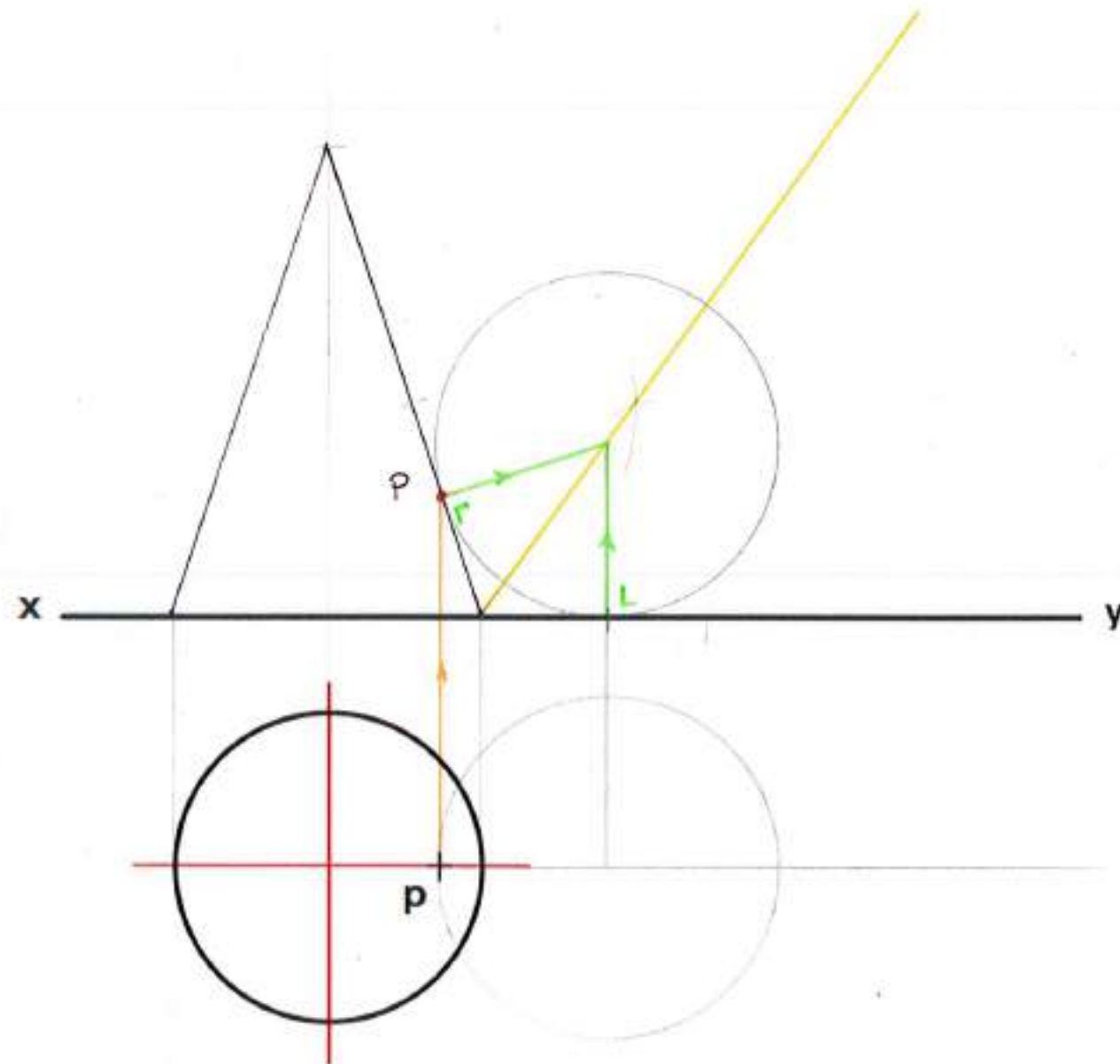


Notes:

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Solids in Contact 4

Name: _____ Date: _____

The plan of a cone of altitude 70mm is shown below. Also shown is a point (p) on the surface of the cone. A sphere which rests on the horizontal plane touches the cone at point p. Draw the plan and the elevation of the two solids in contact.



Notes: • THE EXTREME GENERATOR (OF THE CONE) IS TANGENTIAL TO THE SPHERE.
• TO LOCATE THE CENTRE OF THE SPHERE, WE MUST DRAW THE NORMAL.

Design & Communication Graphics
Solids in Contact 4

Name: R. C. Date: 2/12/17

Walk around the room and sketch the solids in contact at each station into the space provided below. Mark where you would expect the solids to be in contact.

1

2

3

4

5

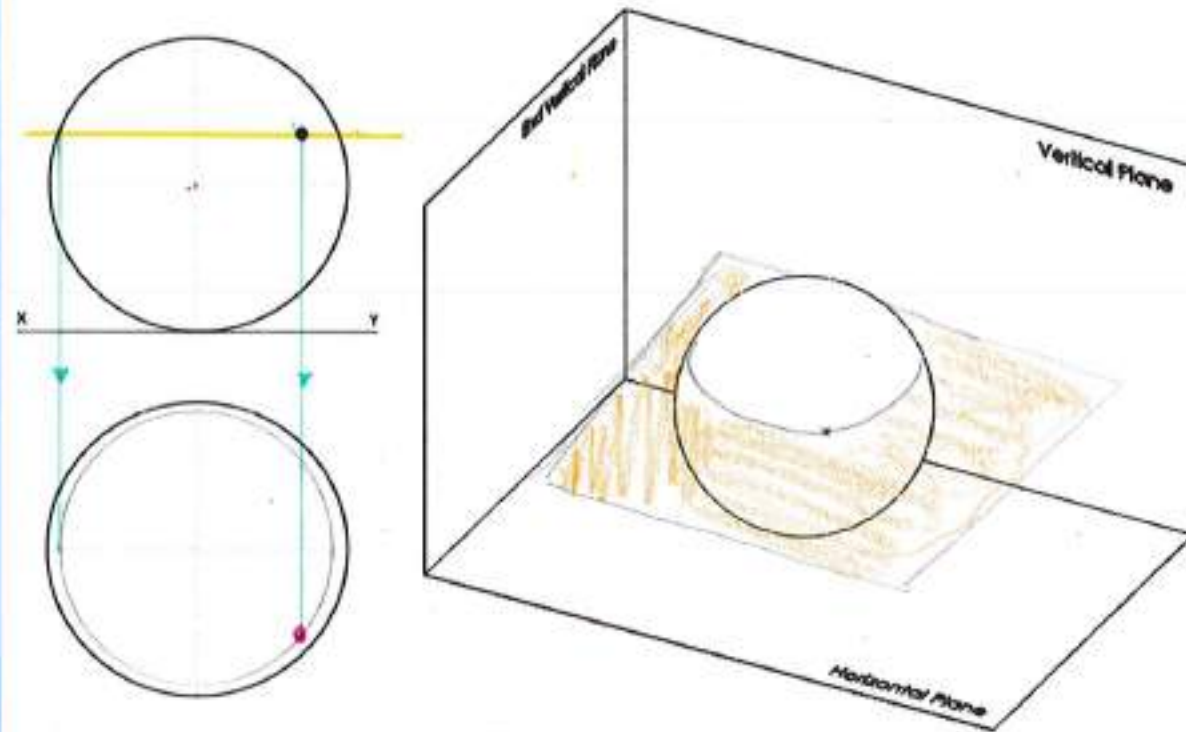
6

Notes:

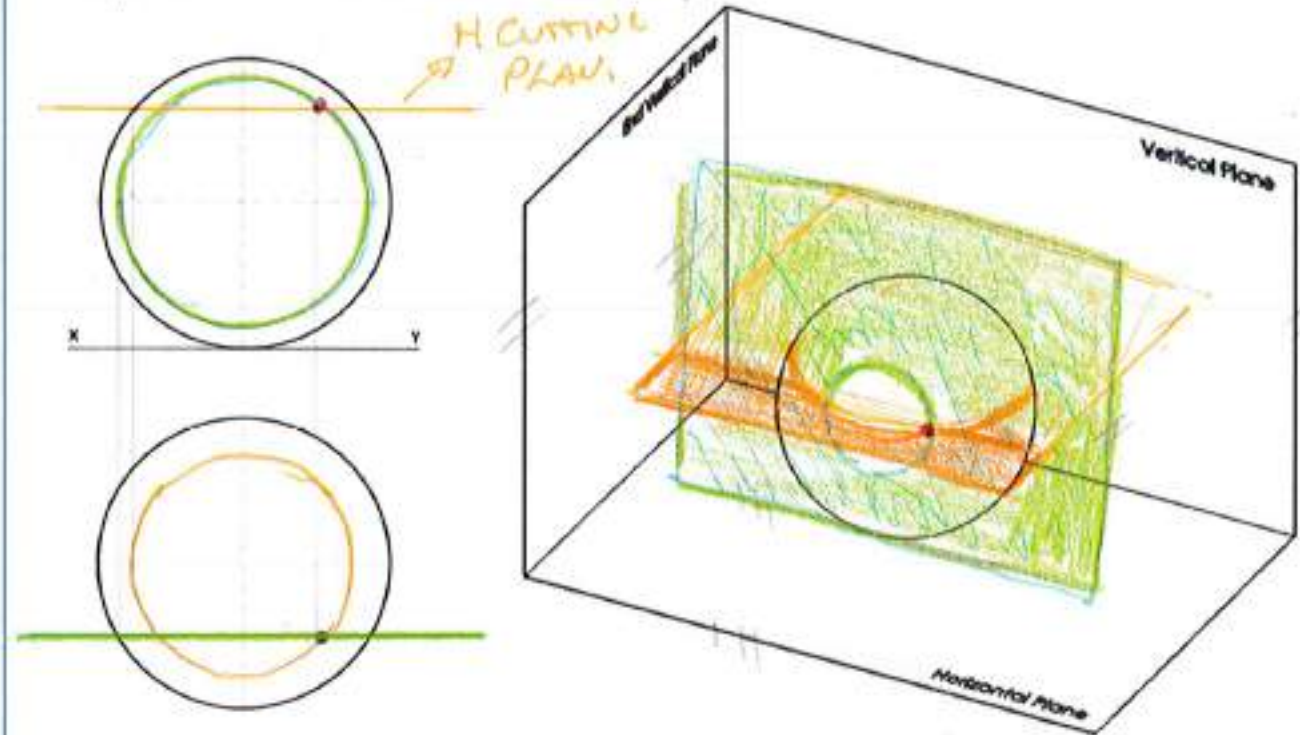
Design & Communication Graphics
Solids in Contact 3

Name: _____ Date: _____

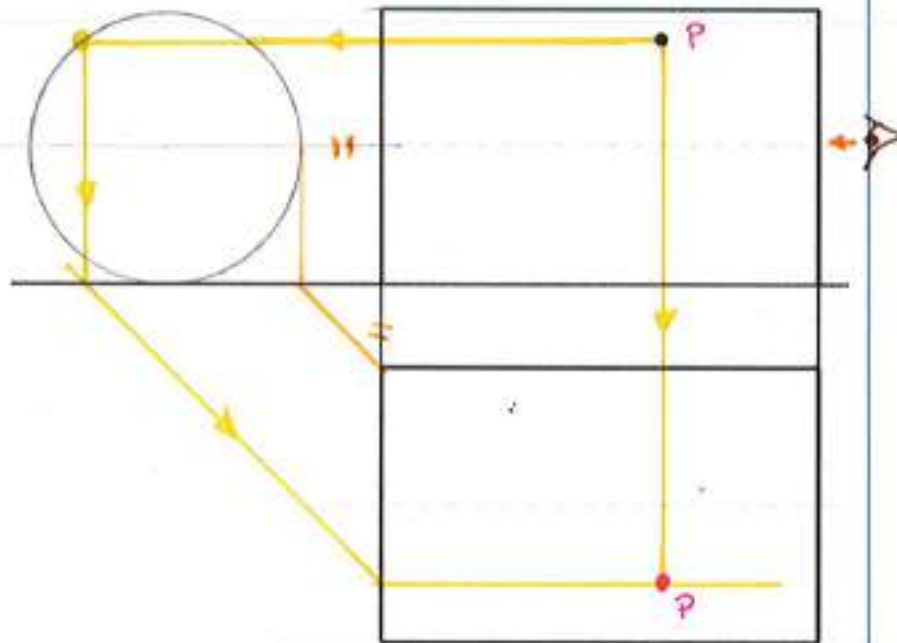
Given the plan and elevation of a sphere and the elevation of a point on the surface of the sphere. Draw the plan of the point.



Given the plan and elevation of a sphere and the plan of a point on the surface of the sphere. Draw the elevation of the point.



Given the plan and elevation of a cylinder and the elevation of a point on the surface of the cylinder. Draw the plan of the point.



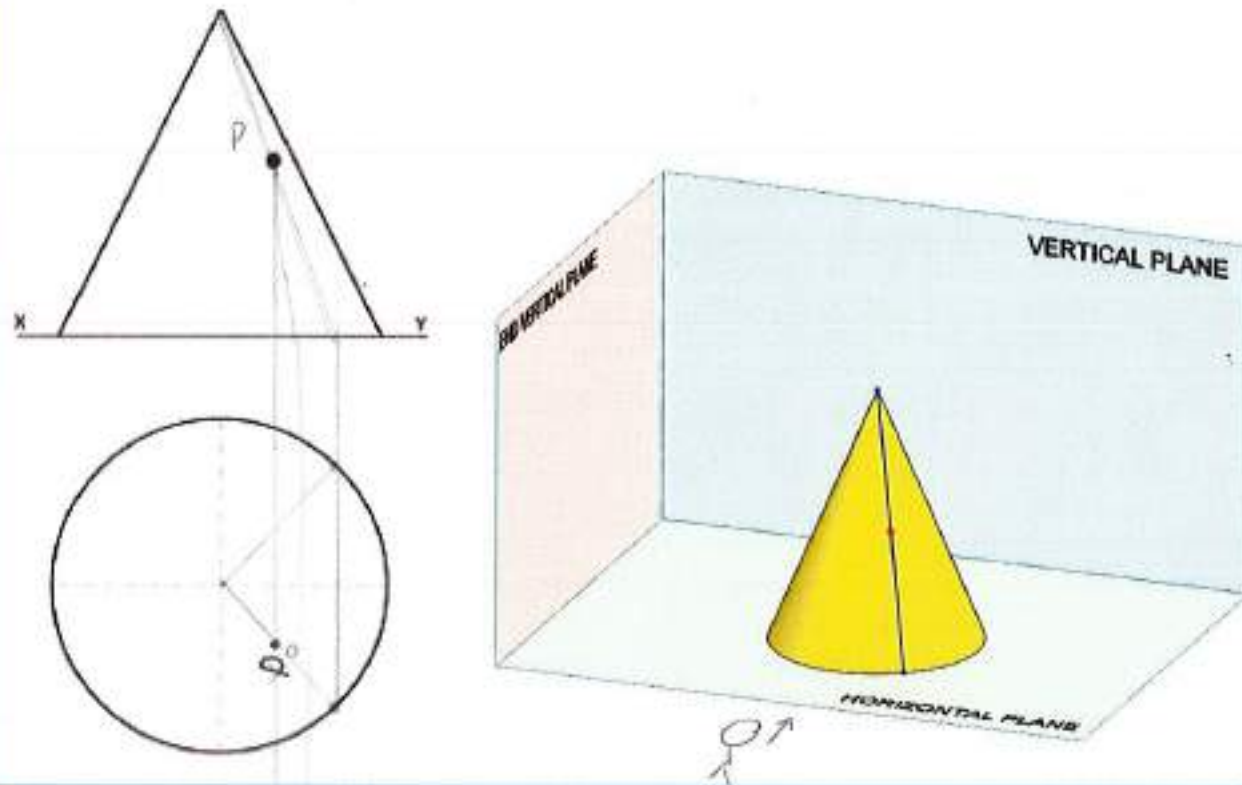
1. Sketch 2 solids in contact at a point.
2. Sketch 2 solids in contact at a line.

Notes:

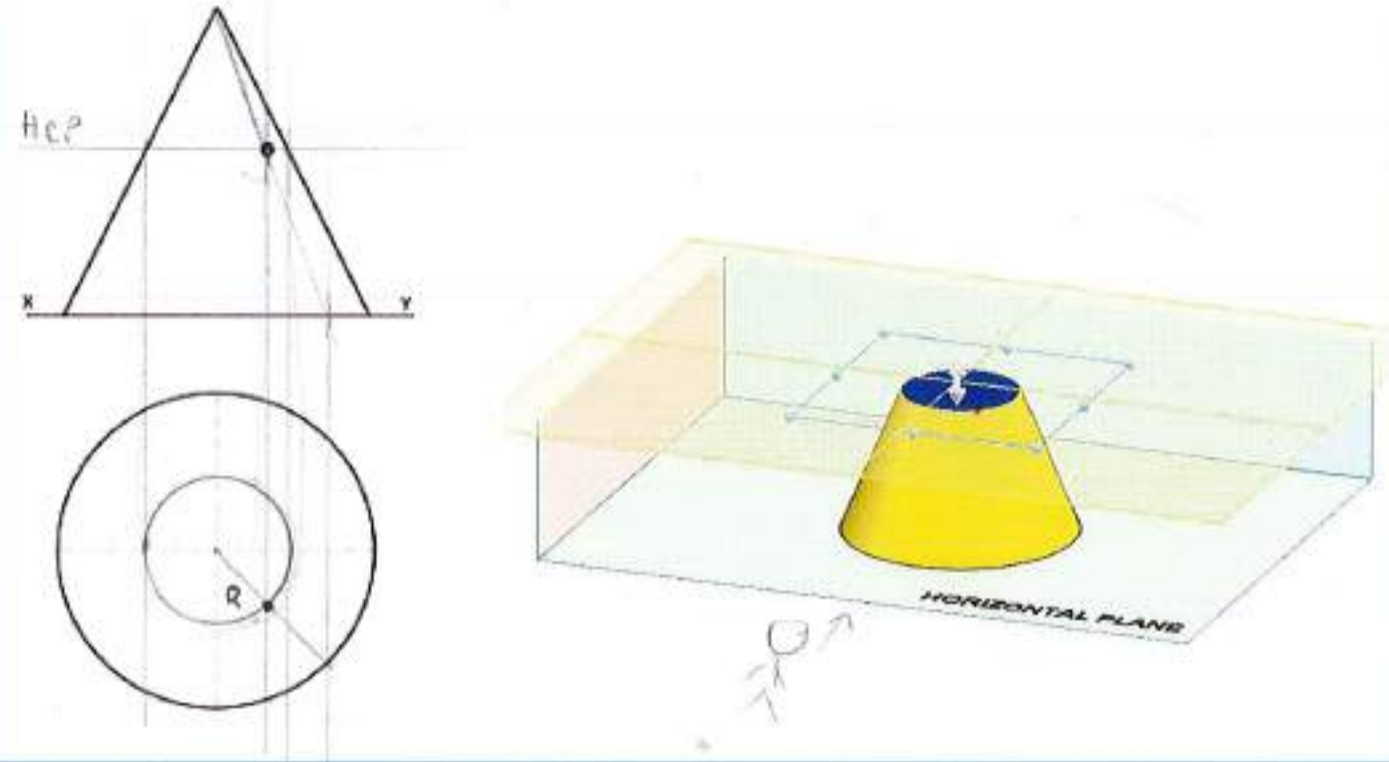
Design & Communication Graphics
Solids in Contact 2

Name: _____ Date: _____

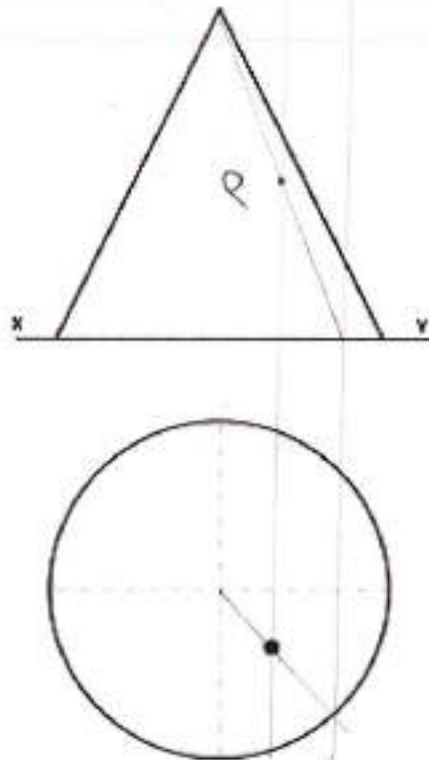
Given the plan and elevation of a cone and the elevation of a point on the surface of the cone. Draw the plan of the point using the generator method.



Given the plan and elevation of a cone and the elevation of a point on the surface of the cone. Draw the plan of the point using the horizontal sections method.



Given the plan and elevation of a cone and the plan of a point on the surface of the cone. Draw the elevation of the point using either of the methods above.



For sketching

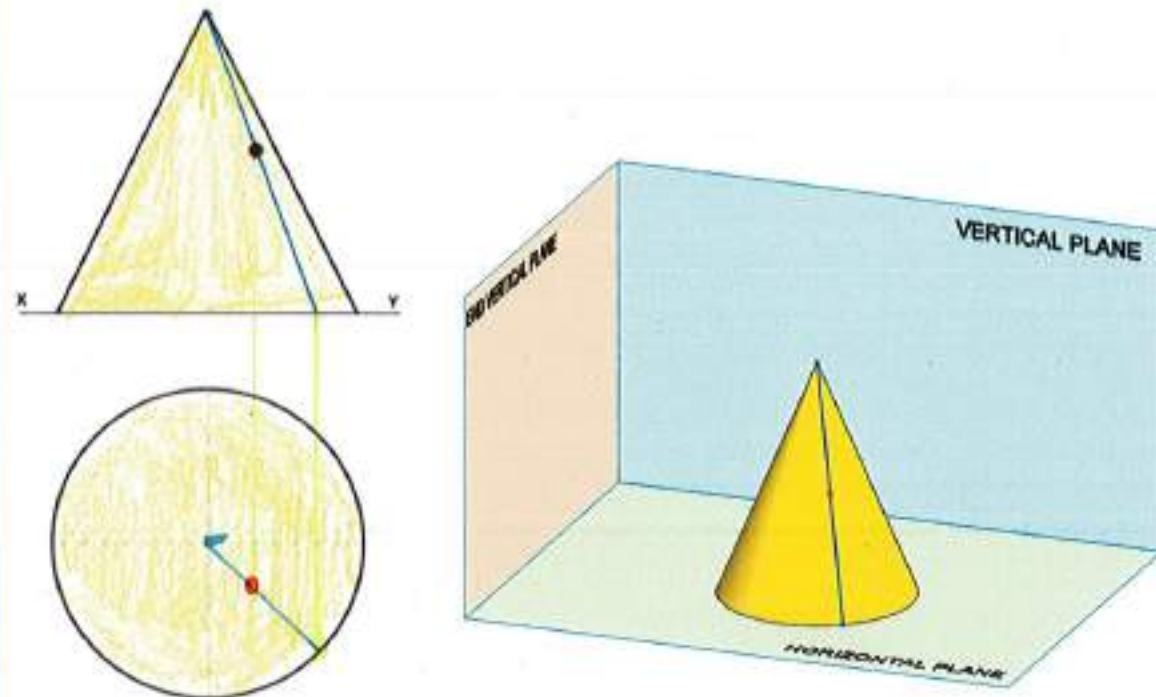
Notes:



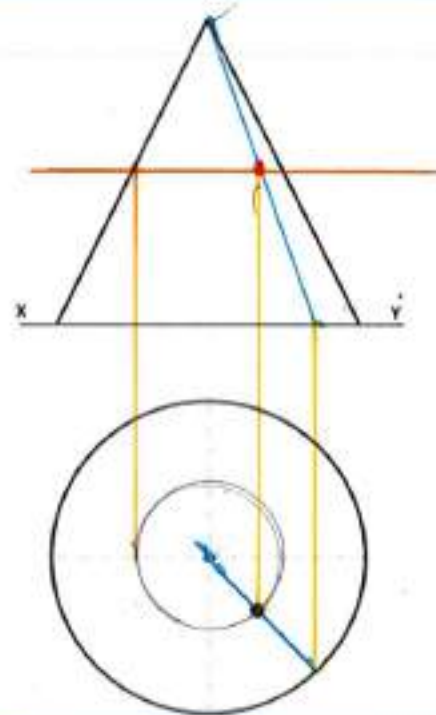
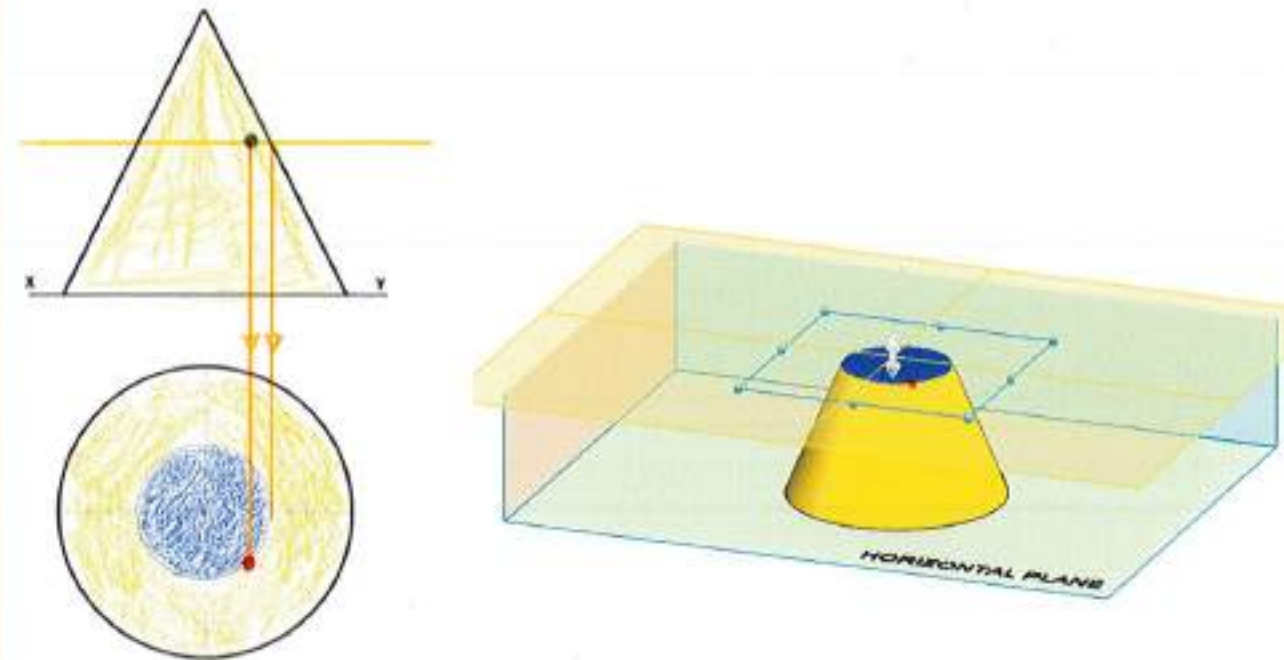
Design & Communication Graphics
Solids in Contact 1

Name: _____ Date: _____

Given the plan and elevation of a cone and the elevation of a point on the surface of the cone. Draw the plan of the point using the generator method.



Given the plan and elevation of a cone and the elevation of a point on the surface of the cone. Draw the plan of the point using the horizontal sections method.



Given the plan and elevation of a cone and the plan of a point on the surface of the cone. Draw the elevation of the point using either of the methods above.

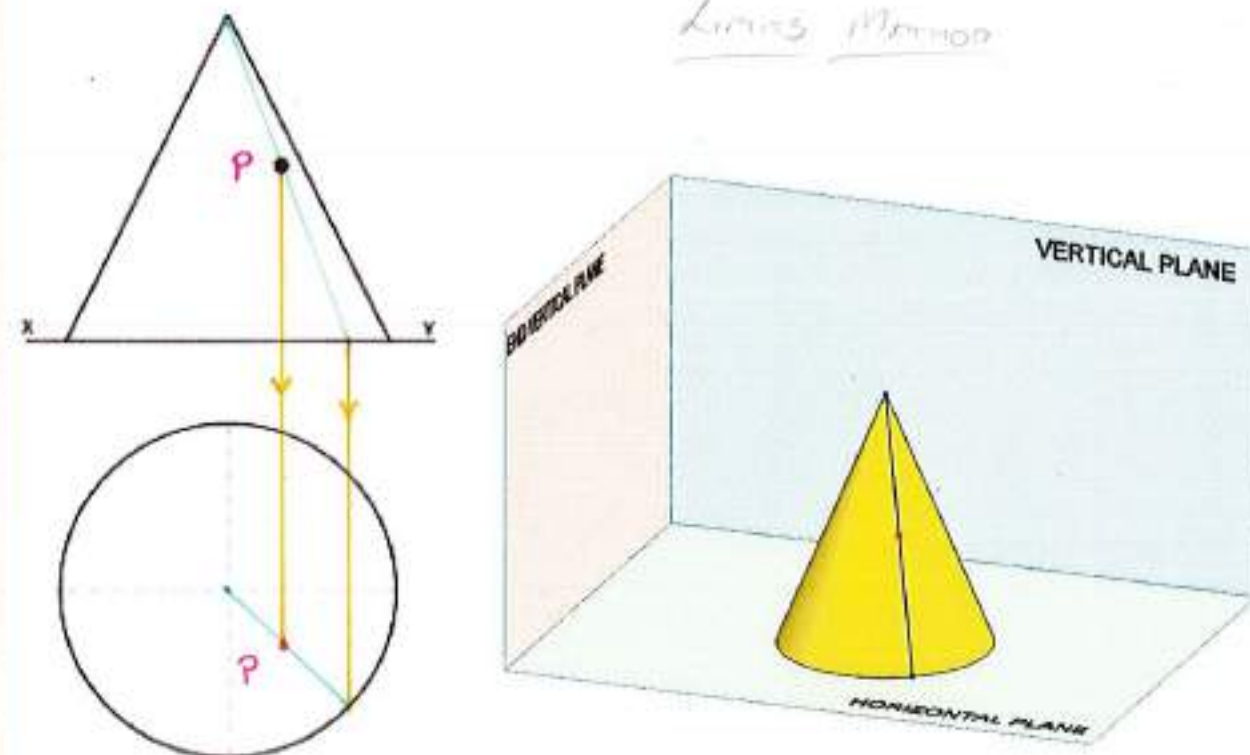
For sketching

Notes:

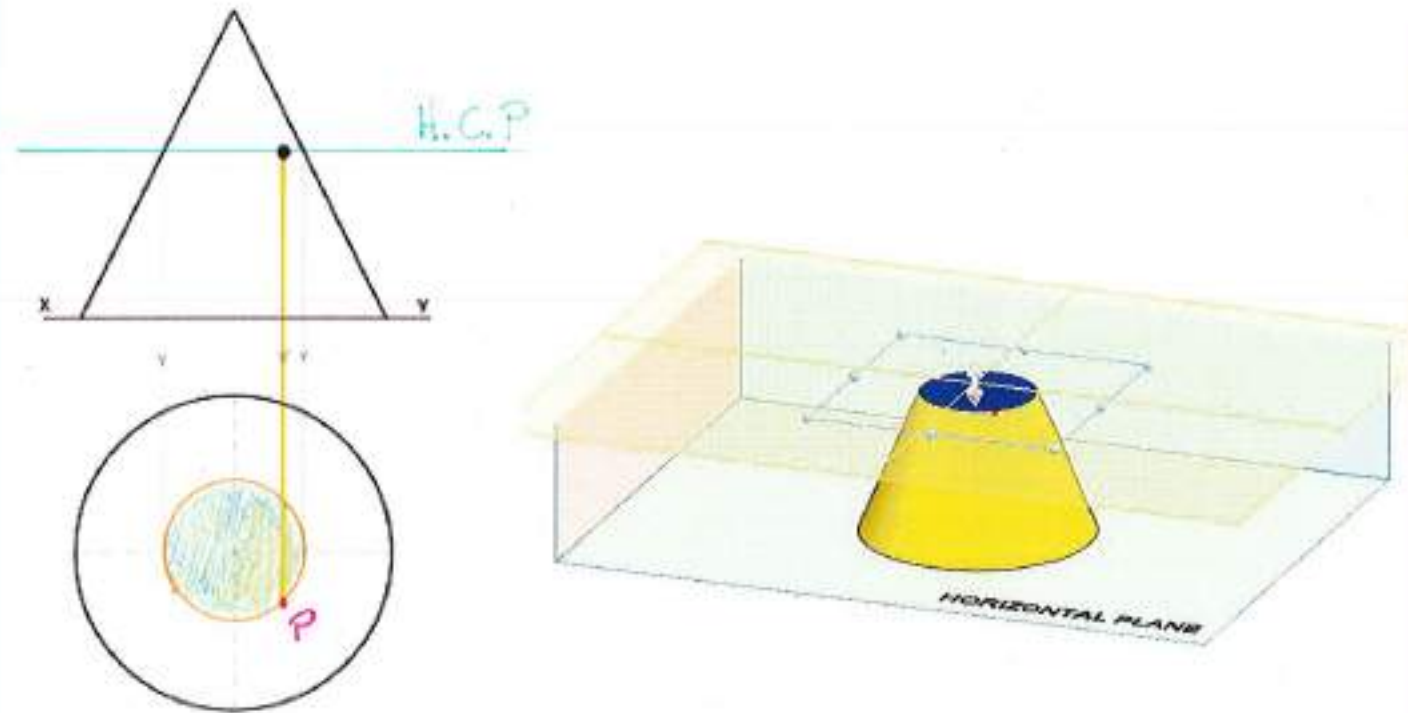
Design & Communication Graphics
Solids in Contact 1

Name: _____ Date: _____

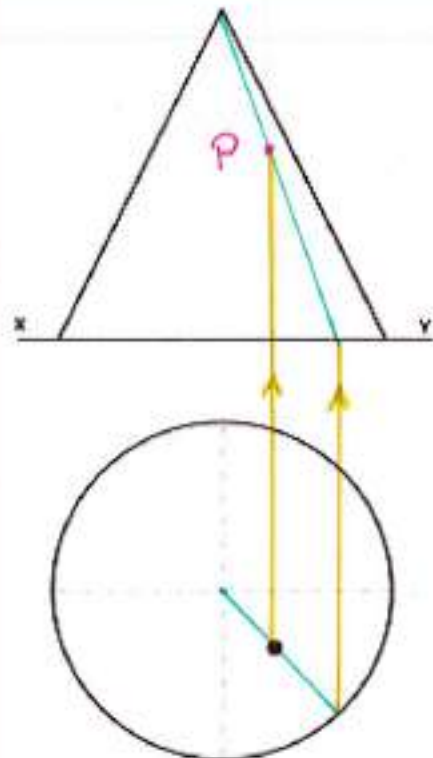
Given the plan and elevation of a cone and the elevation of a point on the surface of the cone. Draw the plan of the point using the generator method.



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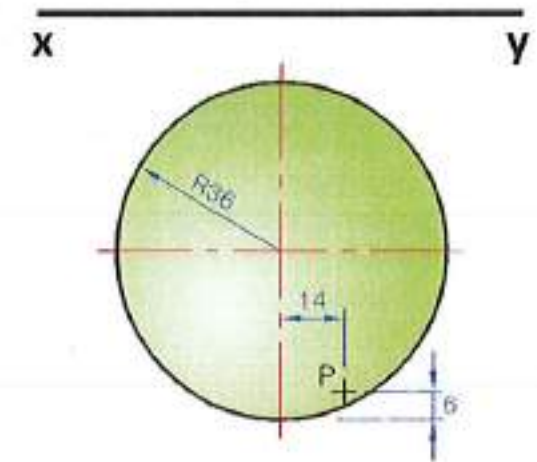


For sketching

Notes:

Design & Communication Graphics
Solids in Contact 1

Name: _____ Date: _____



x _____ y

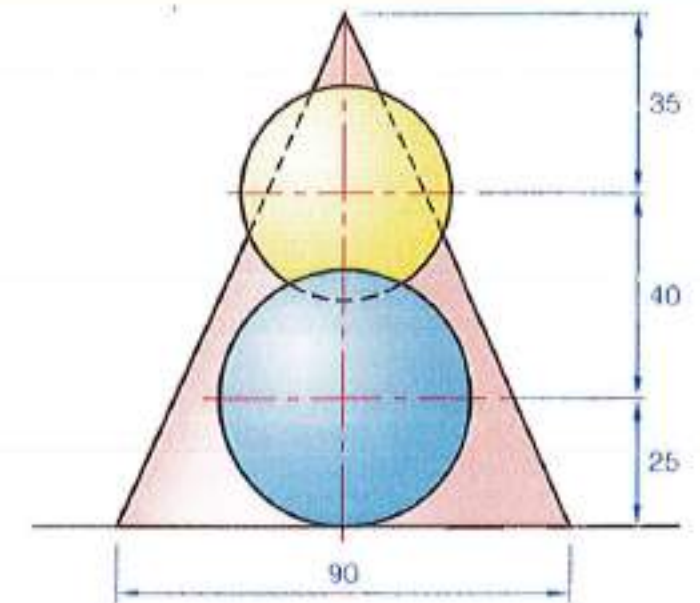
The figure above shows the plan of a sphere with a point P on its underside.

- I. Draw the plan and elevation of the sphere and find the projections of point P
- II. Find the projections of the sphere which rests on the horizontal plane and has a point P as its point of contact



Design & Communication Graphics
Solids in Contact 9

Name: _____ Date: _____



x _____ y

The figure above shows the elevation of two spheres and a cone in contact with one another
 I. Draw the elevation and plan of the solids showing all points of contact



Design & Communication Graphics
 Solids in Contact 10

Name: _____ Date: _____