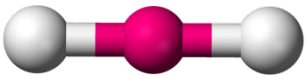
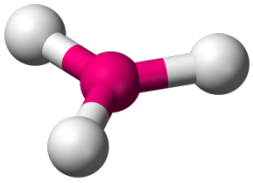
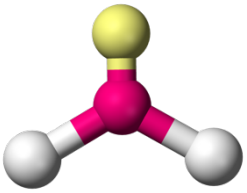
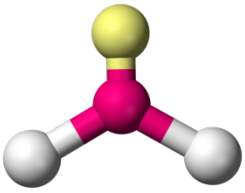
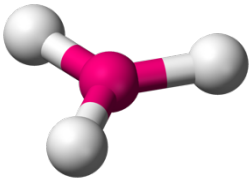
Questions 1 -18 Image Credits:
https://commons.wikimedia.org/wiki/Category:AXE_method_(3D_balls_pink,_white)

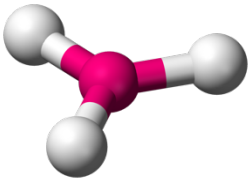
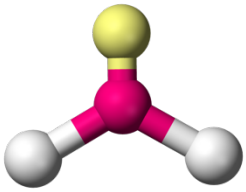
Activity 1:
Question Group 1
Question 1
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_2	AX_3	AX_2E_1
Linear	**Trigonal Planar**	**Bent**
		

Question 2
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_2E_1	AX_2	AX_3
Bent	**Linear**	**Trigonal Planar**
		

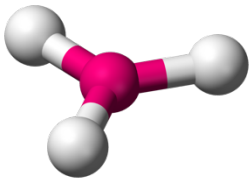
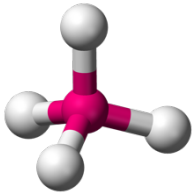
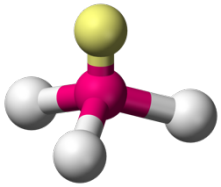
Question 3
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_3	AX_2E_1	AX_2
Trigonal Planar	**Bent**	**Linear**
		

Question Group 2

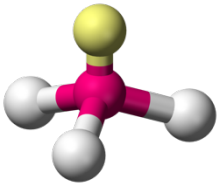
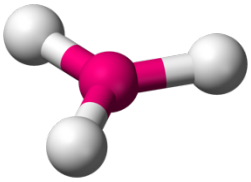
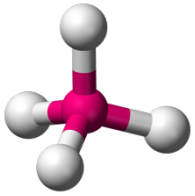
Question 4

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_3	AX_4	AX_3E_1
Trigonal Planar	**Tetrahedral**	**Trig. Pyramidal**
		

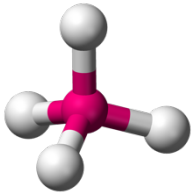
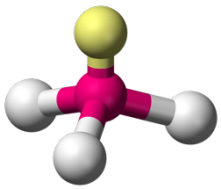
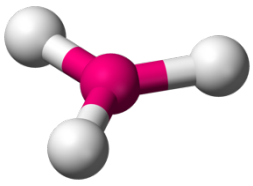
Question 5

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

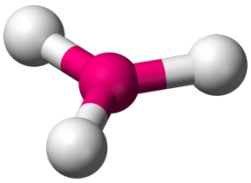
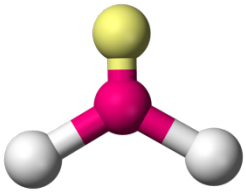
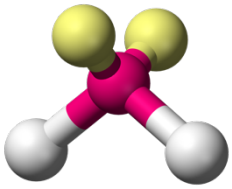
AX_3E_1	AX_3	AX_4
Trig. Pyramidal	**Trigonal Planar**	**Tetrahedral**
		

Question 6

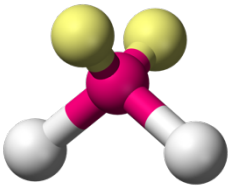
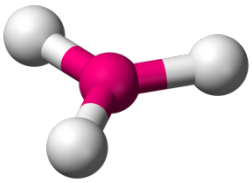
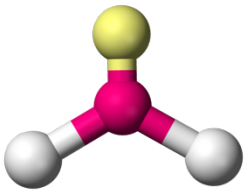
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_4	AX_3E_1	AX_3
Tetrahedral	**Trig. Pyramidal**	**Trigonal Planar**
		

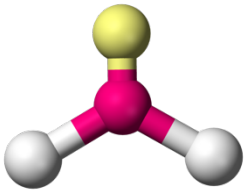
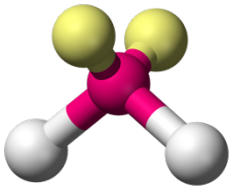
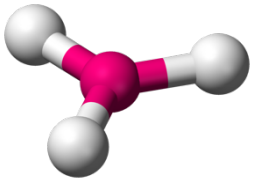
Question Group 3
Question 7
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_3	AX_2E_1	AX_2E_2
Trigonal Planar	**Bent**	**Bent**
		

Question 8
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_2E_2	AX_3	AX_2E_1
Bent	**Trigonal Planar**	**Bent**
		

Question 9
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

AX_2E_1	AX_2E_2	AX_3
Bent	**Bent**	**Trigonal Planar**
		

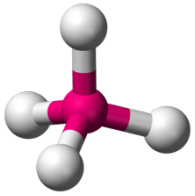
Question Group 4

Question 10

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

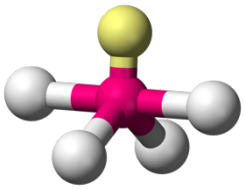
AX_4

Tetrahedral



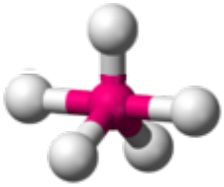
AX_4E_1

See Saw



AX_5

Trig. Bipyramidal

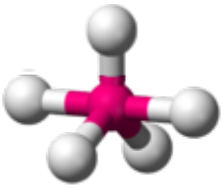


Question 11

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

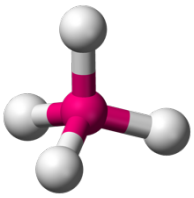
AX_5

Trig. Bipyramidal



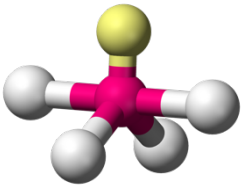
AX_4

Tetrahedral



AX_4E_1

See Saw

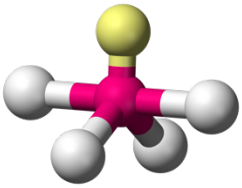


Question 12

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

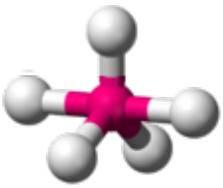
AX_4E_1

See Saw



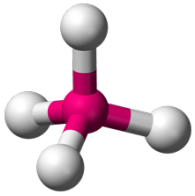
AX_5

Trig. Bipyramidal



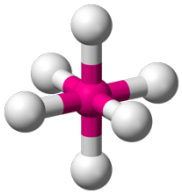
AX_4

Tetrahedral

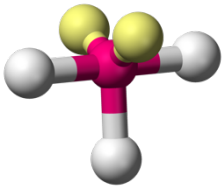


Question Group 5
Question 13
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

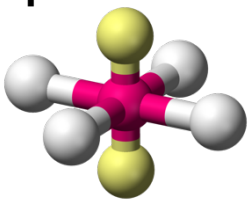
AX_6
Octahedral



AX_3E_2
T-Shaped

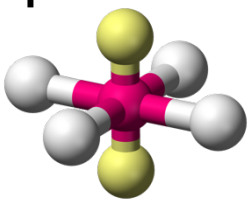


AX_4E_2
Square Planar

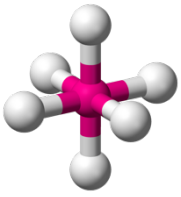


Question 14
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

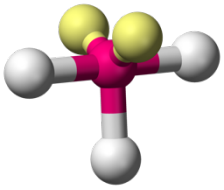
AX_4E_2
Square Planar



AX_6
Octahedral

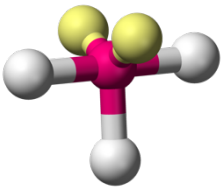


AX_3E_2
T-Shaped

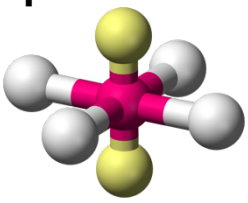


Question 15
The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

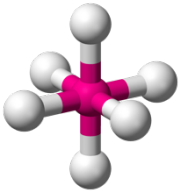
AX_3E_2
T-Shaped



AX_4E_2
Square Planar



AX_6
Octahedral



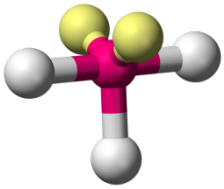
Question Group 6

Question 16

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

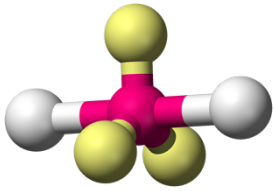
AX_3E_2

T-Shaped



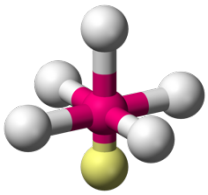
AX_2E_3

Linear



AX_5E_1

Square Pyramid

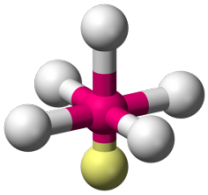


Question 17

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

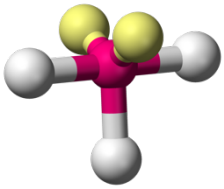
AX_5E_1

Square Pyramid



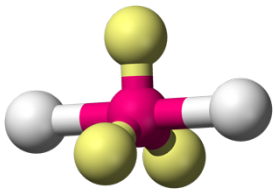
AX_3E_2

T-Shaped



AX_2E_3

Linear

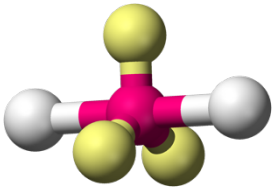


Question 18

The AXE notation and molecular shape for three molecules is shown. Assuming all A-X bonds are polar, identify which molecule would be polar. Select all that apply.

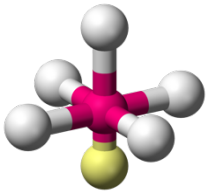
AX_2E_3

Linear



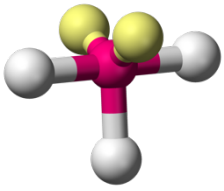
AX_5E_1

Square Pyramid

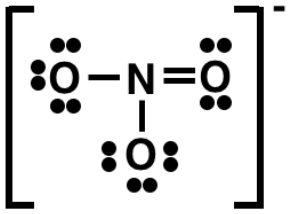


AX_3E_2

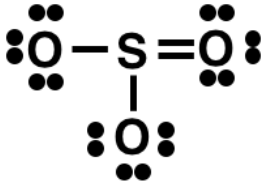
T-Shaped



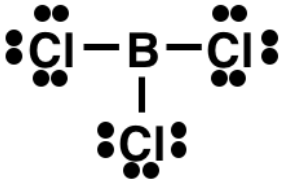
Activity 2:
Question Group 7
Question 19
The Lewis electron dot structure for NO_3^- is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



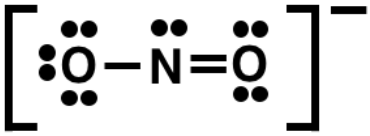
Question 20
The Lewis electron dot structure for SO_3 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



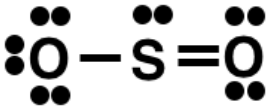
Question 21
The Lewis electron dot structure for BCl_3 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



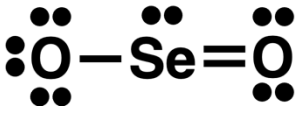
Question Group 8
Question 22
The Lewis electron dot structure for NO_2^- is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 23
The Lewis electron dot structure for SO_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



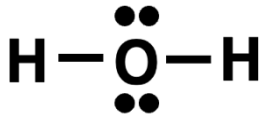
Question 24
The Lewis electron dot structure for SeO_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 9

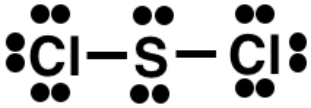
Question 25

The Lewis electron dot structure for H_2O is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



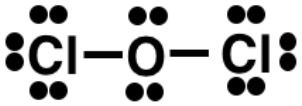
Question 26

The Lewis electron dot structure for SCl_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 27

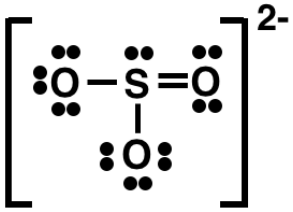
The Lewis electron dot structure for OCl_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 10

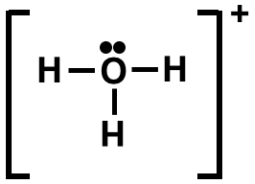
Question 28

The Lewis electron dot structure for SO_3^{2-} is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



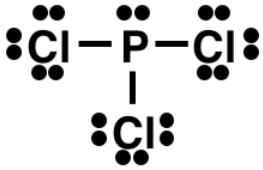
Question 29

The Lewis electron dot structure for H_3O^+ is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 30

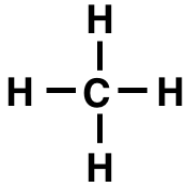
The Lewis electron dot structure for PCl_3 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 11

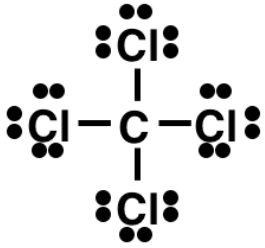
Question 31

The Lewis electron dot structure for CH_4 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



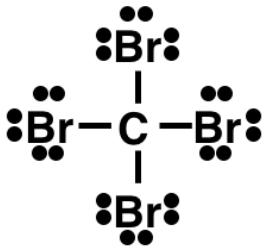
Question 32

The Lewis electron dot structure for CCl_4 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 33

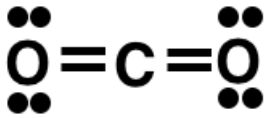
The Lewis electron dot structure for CBr_4 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 12

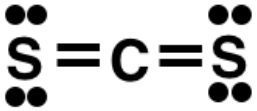
Question 34

The Lewis electron dot structure for CO_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



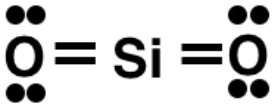
Question 35

The Lewis electron dot structure for CS_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



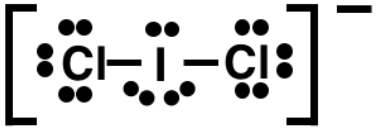
Question 36

The Lewis electron dot structure for SiO_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



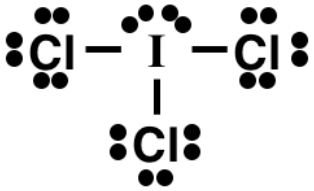
Activity 3
Question Group 13
Question 37
The Lewis electron dot structure for XeF_2 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.

Question 38
The Lewis electron dot structure for ICl_2^- is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.

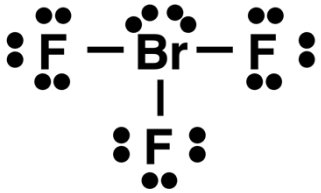


Question 39
The Lewis electron dot structure for IBr_2^- is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.

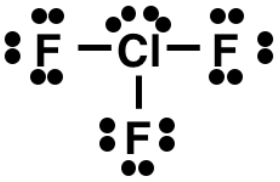
Question Group 14
Question 40
The Lewis electron dot structure for ICl_3 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 41
The Lewis electron dot structure for BrF_3 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



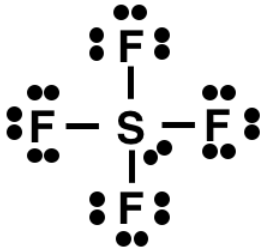
Question 42
The Lewis electron dot structure for ClF_3 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 15

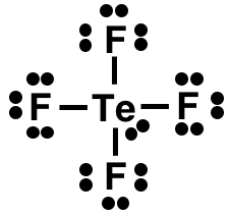
Question 43

The Lewis electron dot structure for SF_4 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



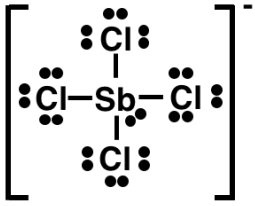
Question 44

The Lewis electron dot structure for TeF_4 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 45

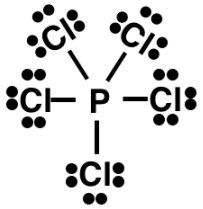
The Lewis electron dot structure for $SbCl_4^-$ is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 16

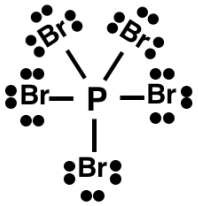
Question 46

The Lewis electron dot structure for PCl_5 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



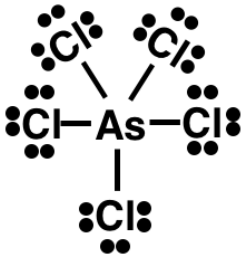
Question 47

The Lewis electron dot structure for PBr_5 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 48

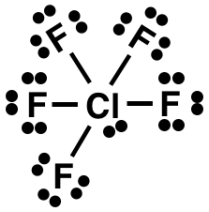
The Lewis electron dot structure for $AsCl_5$ is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 17

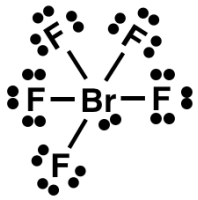
Question 49

The Lewis electron dot structure for ClF_5 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



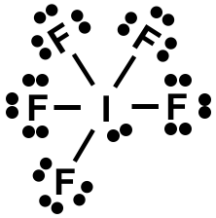
Question 50

The Lewis electron dot structure for BrF_5 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 51

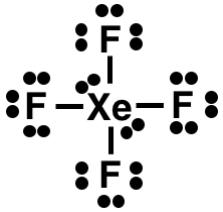
The Lewis electron dot structure for IF_5 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question Group 18

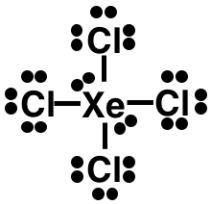
Question 52

The Lewis electron dot structure for XeF_4 is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 53

The Lewis electron dot structure for $XeCl_4$ is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.



Question 54

The Lewis electron dot structure for ClF_4^- is shown. Identify the molecular shape. Then indicate if the molecule is polar or non-polar.