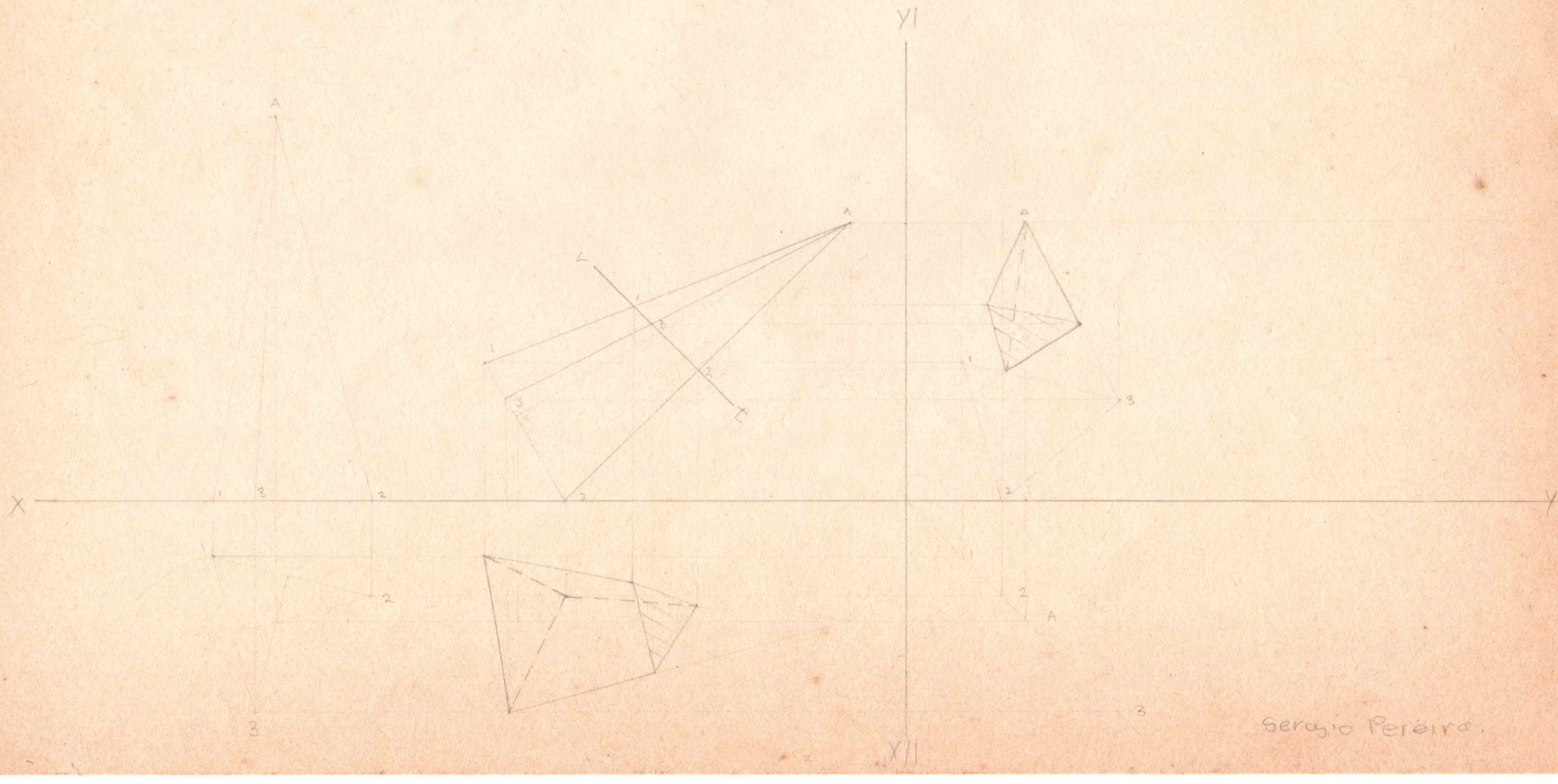
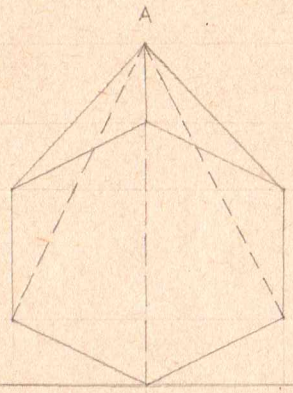


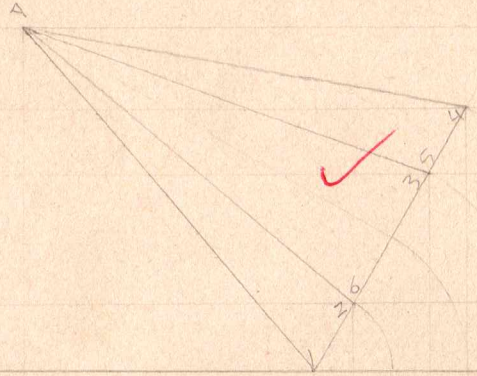
Sergio Pereira.

SLANTED HEXAGONAL PYRAMID

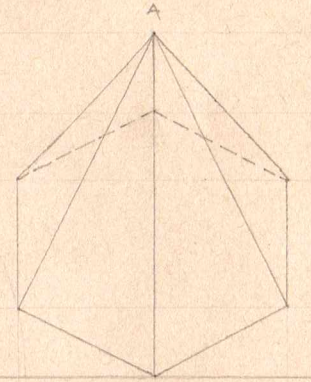
RIGHT SIDE VIEW

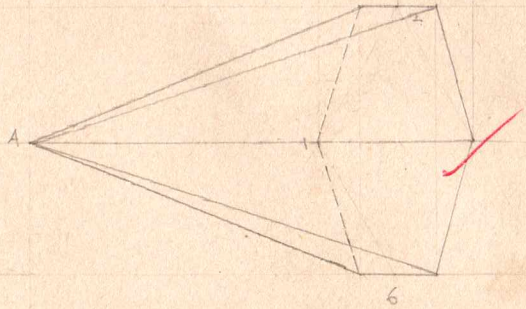


FRONT VIEW



LEFT SIDE VIEW





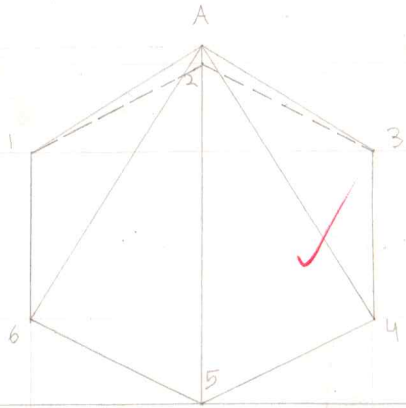
TOP VIEW

10/10 good!

SERGIO PEREIRA STD 7E²		
12:5:93	CW	

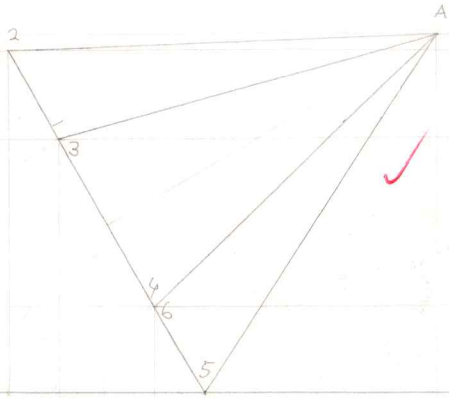
HEXAGONAL PYRAMID

RIGHT SIDE VIEW



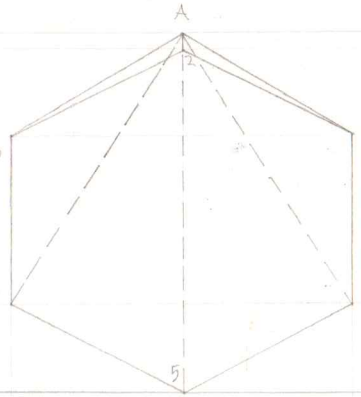
X1

FRONT VIEW

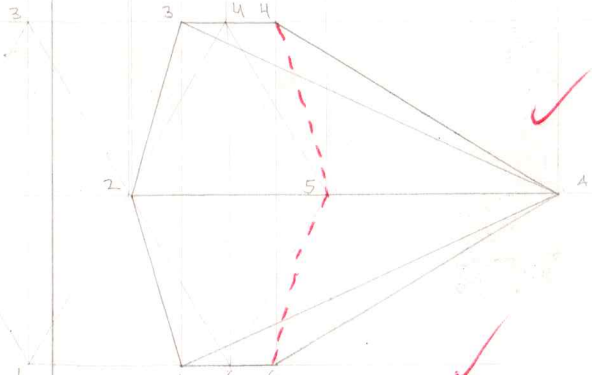


Y1

LEFT SIDE VIEW



X — Y



TOP VIEW

X11

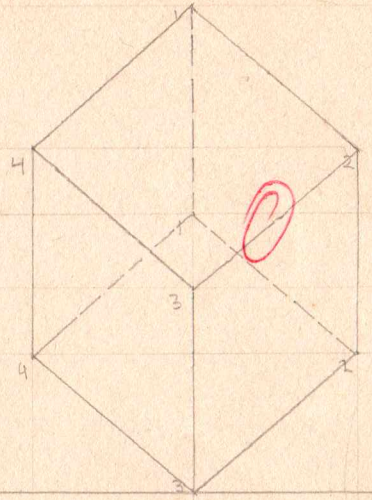
Y11

9/10 Good work!

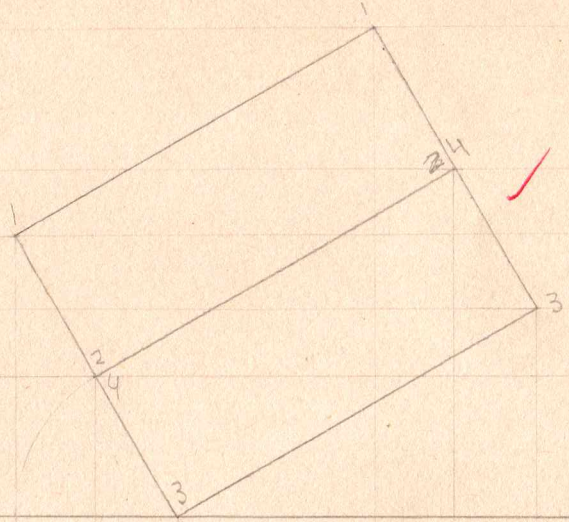
SERGIO PEREIRA STD7E2		
19:5:93	CVV	

SQUARE PRISM

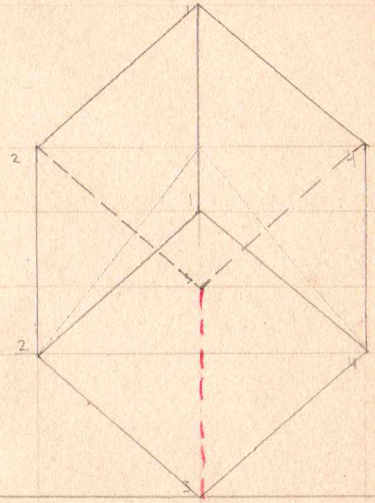
RIGHT SIDE VIEW

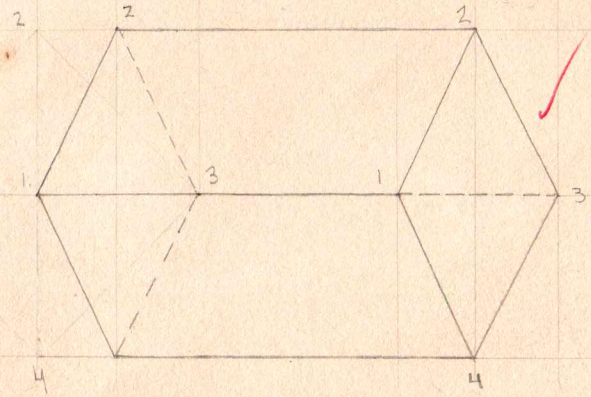


FRONT VIEW



LEFT SIDE VIEW





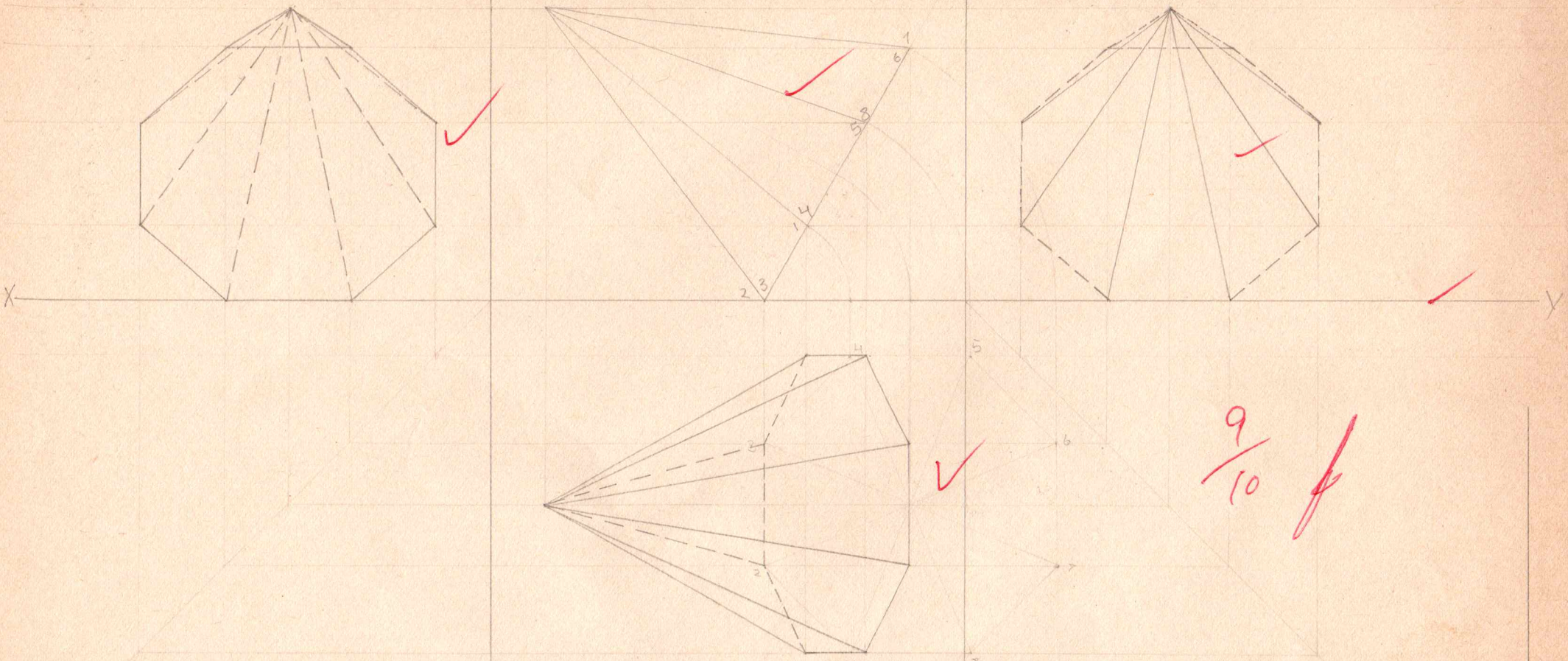
TOP VIEW

9/10

SERGIO PEREIRA STD 7E

14:5:1993 CW

Headings?



9/10

SERGIO	PEREIRA	STD 7E 2
30.4.93	C W	

STANGER HIGH SCHOOL

STD 7 JUNE 1993

EXAMINER : A.PINHEIRO TIME: 1½ Hours

MODERATOR : A. van der WATT TOTAL: 90

TECHNICAL DRAWING : ORDINARY GRADE

I. Answer all the questions.

2. Marks will be deducted for poor linework.

3. Draw on one side of the paper only.

I. Fig.I. shows the first angle orthographic projection drawing of a machine component. Draw an isometric of the given figure.

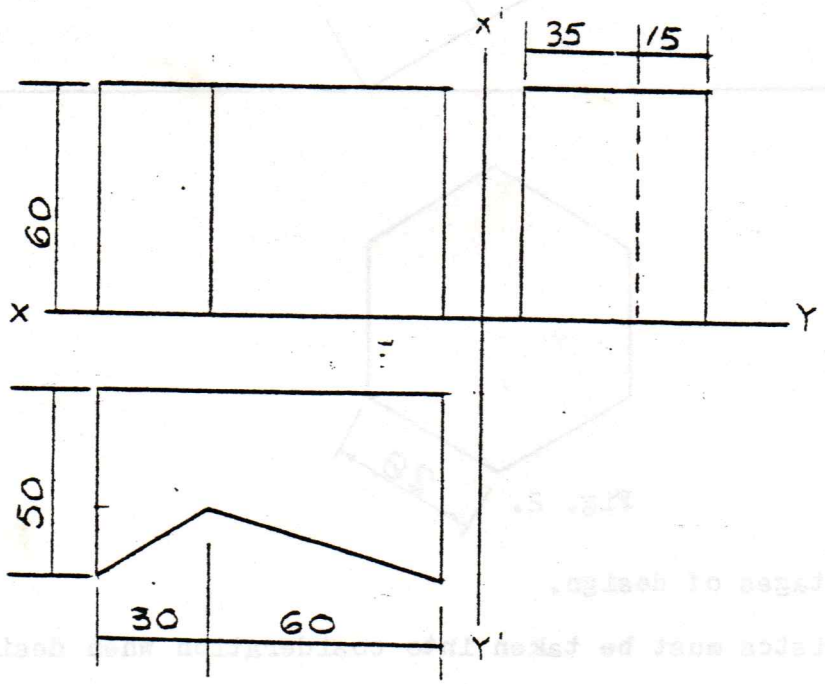


Fig.I. (25)

2. A pentagonal pyramid with its base resting on the horizontal plane has base sides of 30mm and an axis height of 70mm. Using the given information, draw in Ist angle orthographic projection the following views:

a) the top view;

b) the front view and

c) the left side view. (25)

3. Refer to figure 2.

The front view of a hexagonal prism with its base tilted at 30° to the H.P. (horizontal plane) is given.

Draw in Ist angle orthographic projection the following views:

a) the given front view;

b) the top view and

c) the right side view.

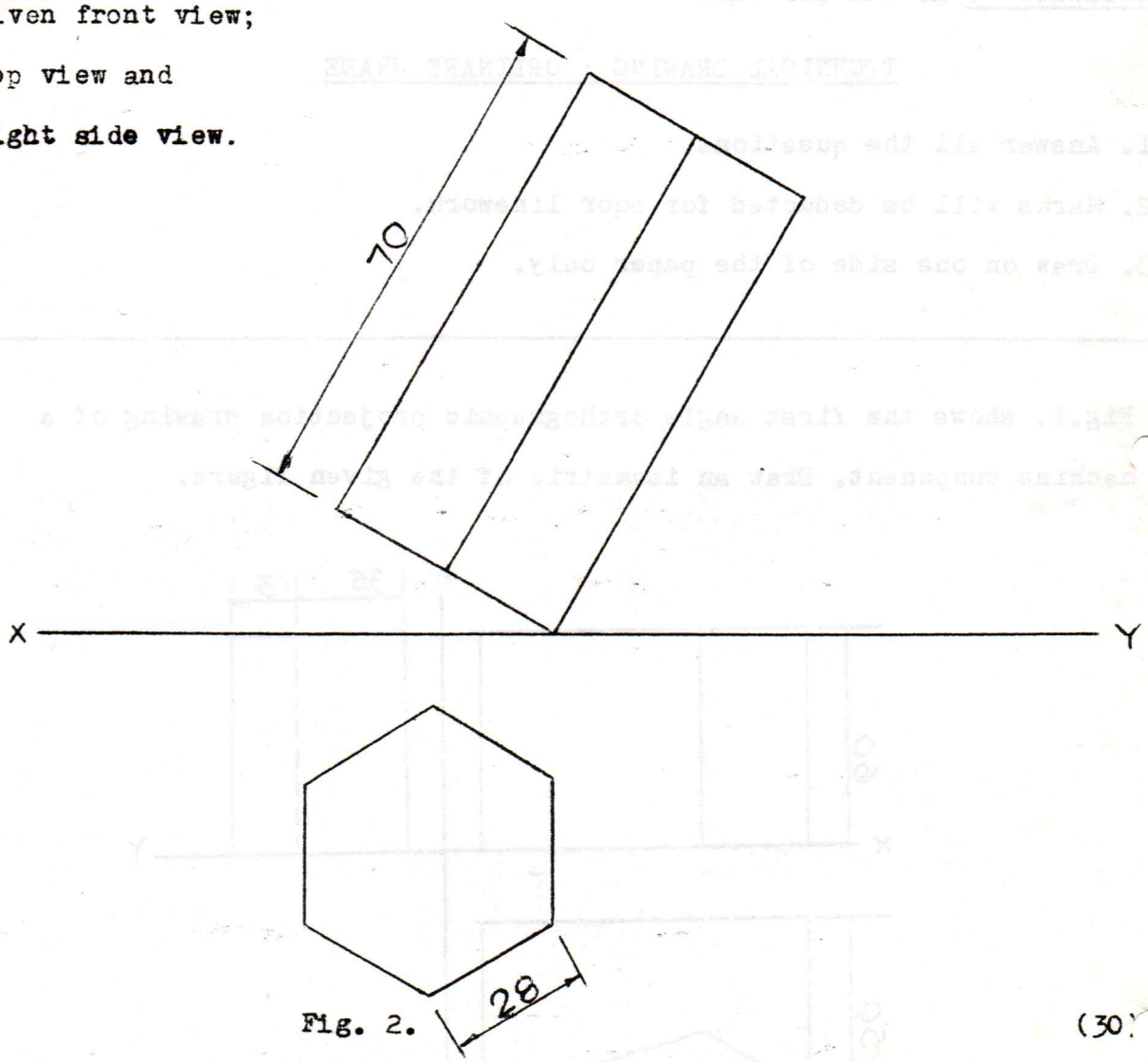


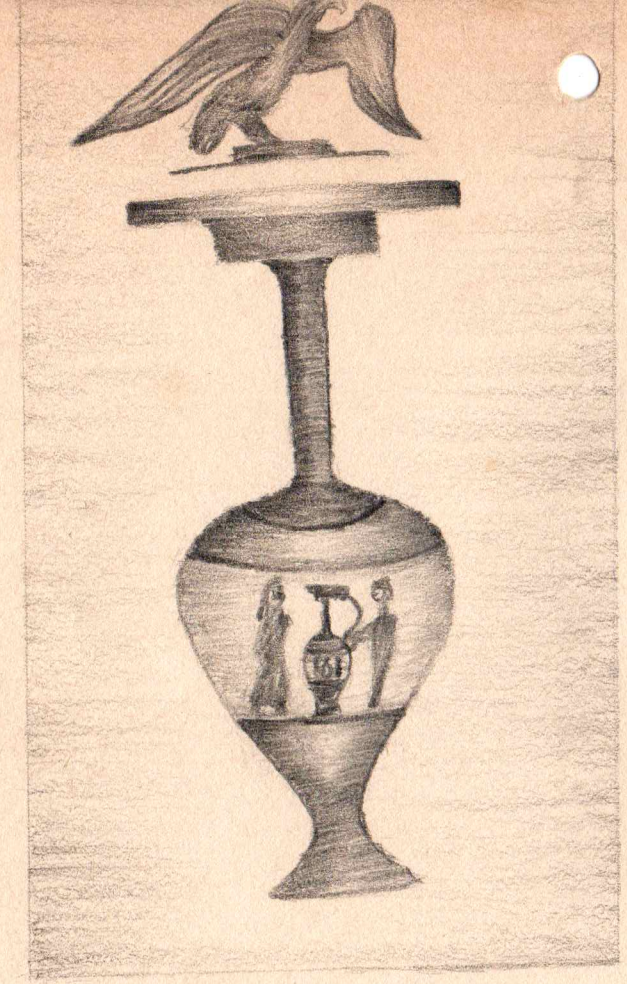
Fig. 2. (30)

4.a) Name the six stages of design. (3)

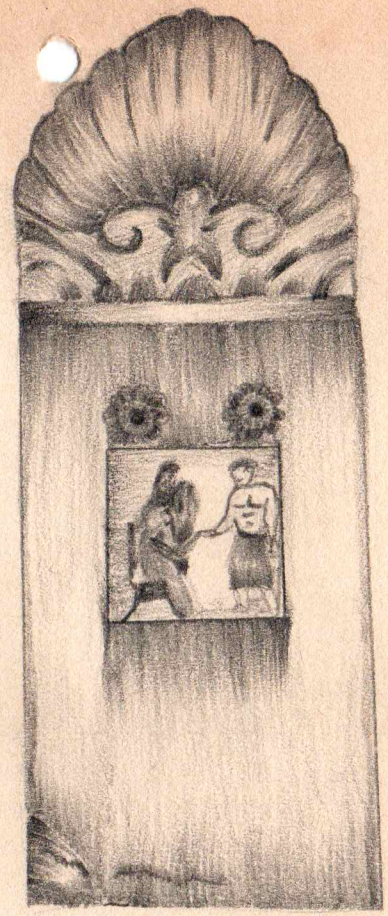
b) What characteristcs must be taken into cosideration when designing a product, to make it acceptable? (3)

c) Before designing a product, what aspects must you be aware of? (4)

TOTAL.....90



Tombstone of narrow type of the Kerameicus cemetery at Athens with funeral vase. (Kerameikos)



Tombstone of narrow type from the Kerameicus cemetery from Athens.

Checked by S. M. S. Byrnes

4.

For Interest!

Did you know.

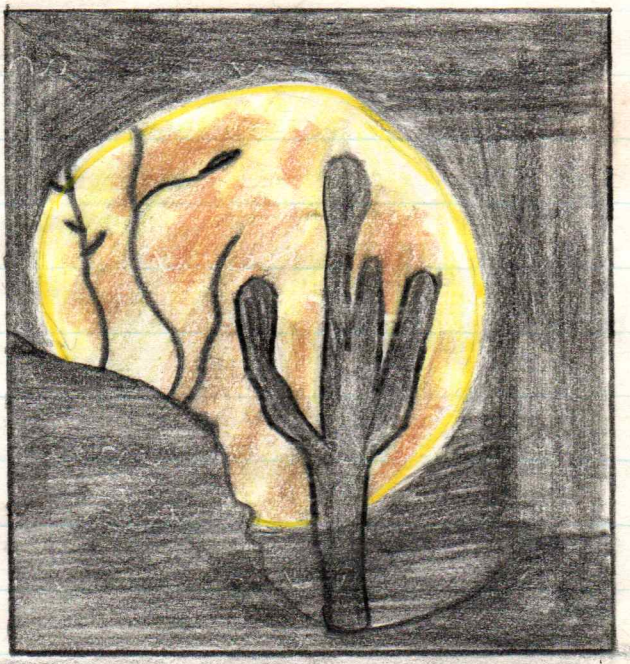
Checked by S.M.S. Byrnes

The duplication of the cube is a problem that was raised by the ancient Greeks.
A Greek legend has it that when an epidemic broke out and many Athenians were dying, a group of people went to the oracle of Delphi to ask what should be done to pacify the god Apollo to stop the deaths. the oracle told them to double the volume of the cubic altar dedicated to Apollo.
The Greeks had to do this construction used only a pair of compasses and a ruler. They were unable to solve their problem geometrically.
This problem has puzzled mathematicians for many years and in the 19th century it was proved that this problem could not be solved geometrically

The ruins of Delphi near Mount Parnassus. Thousands of Greeks came to Delphi to consult the oracle.

9.

For Interest



From long before the first man walked the earth, the moon has shone brightly in the night sky. At one time many worshiped it as a goddess. The Greek author Plutarch claimed that it was the final destination of pure souls after death. In Baltic mythology the moon was a man, husband of the sun. They had a marital dispute, and the moon ran away from the sun his wife. Seldom appeared with her in the heavens!

By Antenor Unrestored

Checked by
S.M.S. Byrnes

This is the work of the sculptor Antenor. who was also author of a celebrated group representing the tyrant-slayers. Doriam Art is a complete change.

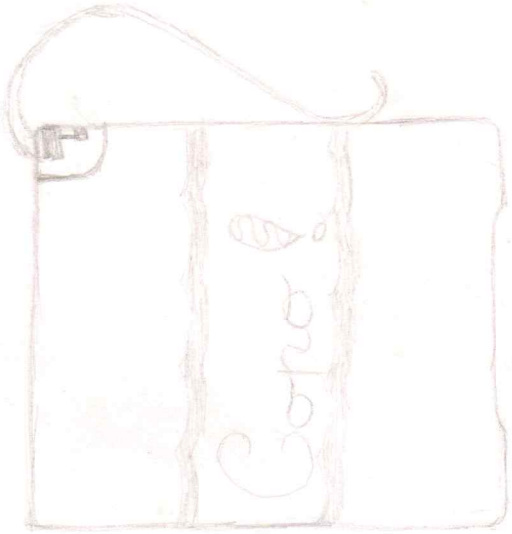
eg: In place of draped goddesses — nude male forms ....

Statue of Nike or Victory of Delos

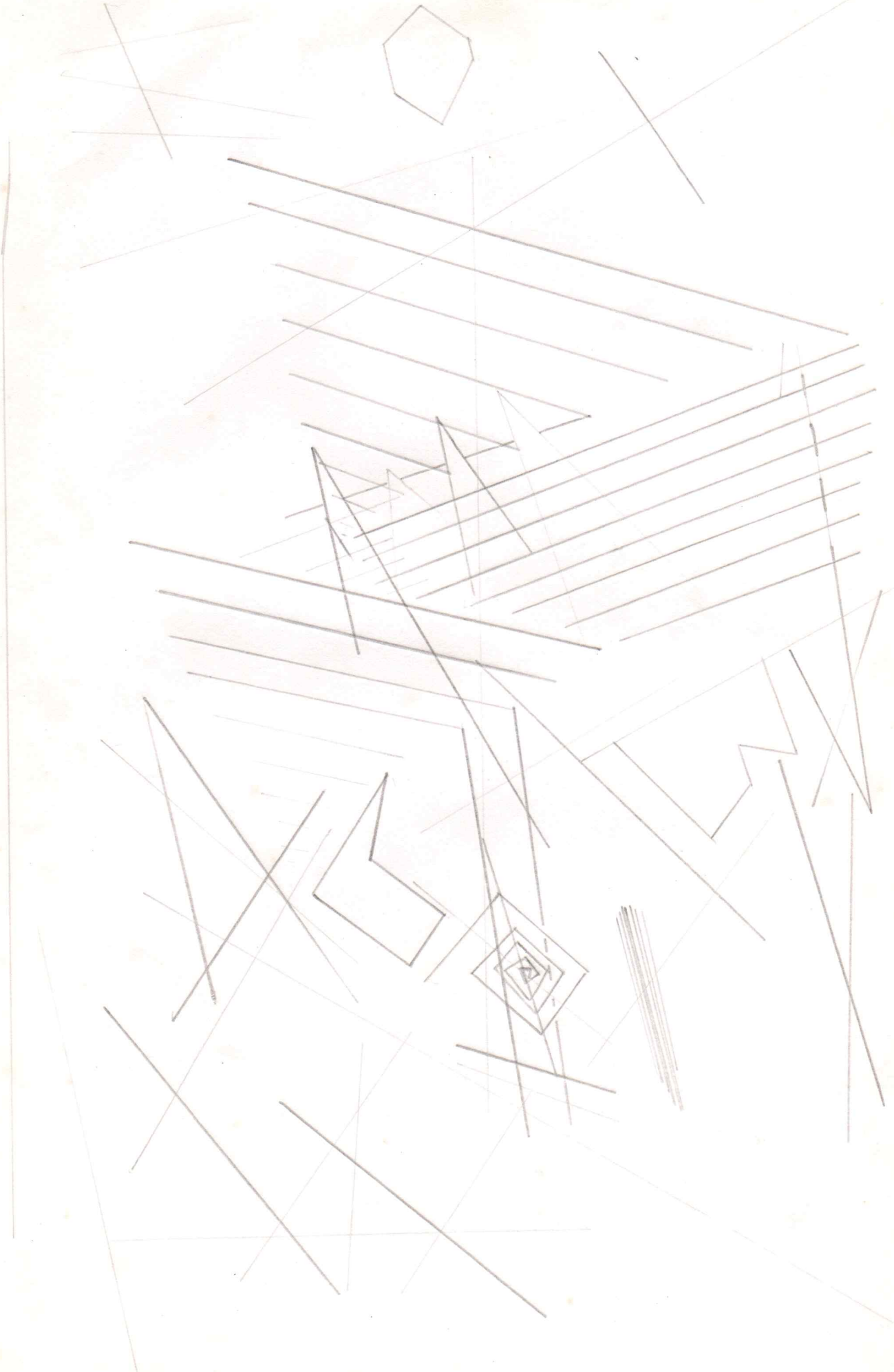
Checked by
S.M.S. Byrnes

✓

This is a picture or sculture of a flying figure thats has six wings. Like the serahim in the visicn of Isia.


Coca


Coca
Cola



13. # Period classification

Investigation

configuração electrónica

Row	Group 1 (1é de valencia)	2 (2é)	3é	2é	1é	2é	1é	2é	1é	1é	1-3é	3é	3	4	5	6	7	8
1	1Z H 1A																	2Z He 4
2	3Z Li 7	4Z Be 9											5Z B^3 11	6Z C^0 12	7Z N^1 14	8Z O^2 16	9Z F^3 19	10Z Ne^4 20
3	11Z Na 23	12Z Mg 24											13Z Al 27	14Z Si 28	15Z P 31	16Z S 32	17Z Cl 35-5	18Z Ar 40
4	19Z K 39	20Z Ca 40	21Z Sc 45	22Z Ti 48	23Z V 51	24Z Cr 52	25Z Mn 55	26Z Fe 56	27Z Co 59	28Z Ni 59	29Z Cu 63-5	30Z Zn 65	31Z Ga 70	32Z Ge 72-6	33Z As 75	34Z Se 79	35Z Br 80	36Z Kr 84
5	37Z Rb 85.5	38Z Sr 88	39Z Y 89	40Z Zr 91	41Z Nb 93	42Z Mo 96	43Z Tc 99	44Z Ru 101	45Z Rh 103	46Z Pd 106	47Z Ag 108	48Z Cd 112	49Z In 115	50Z Sn 119	51Z Sb 122	52Z Te 127.6	53Z I 127	54Z Xe 131
6	55Z Cs 133	56Z Ba 137	57Z La 139	72Z HF 178.5	73Z Ta 181	74Z W 184	75Z Re 186	76Z Os 190	77Z Ir 192	78Z Pt 195	79Z Au 197	80Z Hg 201	81Z Tl 204	82Z Pb 207	83Z Bi 209	84Z Po 210	85Z At 210	86Z Rn 222
7	87Z Fr 228	88Z Ra 226	89Z Ac 227															

Key

Z	Atomic MASS
E	symbol.
A	Atomic NUMb

58-71 Lanthanum Series

90-103 Actinium Series

6/13/97

16.

Practical investigation on Density

1. To find the density of some irregular objects or solids: Fill a cylinder half way of water (50mm), then measure the mass of the object after that put the object in the cylinder with the water, now read the measurement and subtract from the other reading then the Density can be found using this rule = $\left(\frac{\text{mass g}}{\text{volume cm}^3}\right)$ = - Density

---

2. To find density of water: Put 10 cm of water in a cylinder, this means theres 10 cm^3 (volume) but before this is done measure the mass of the cylinder and then the mass of the cylinder and the water then they are to be subtracted this will give you the mass and then is devided to the volume.

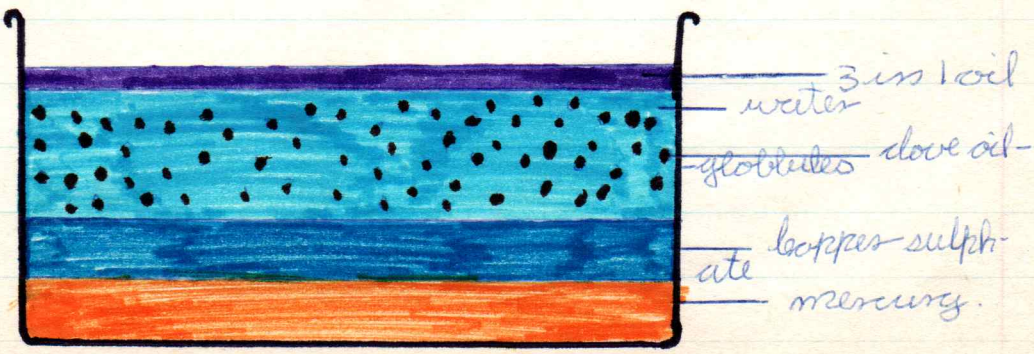
---

3. To show liquids will float on liquids of greater density and will sink in liquids of lesser density.

Method:

1. Pour mercury into water
2. Pour kopper sulphate into the mercury
3. Pour some clove oil into water
4. Pour some 3 in 1 oil into the water

Result

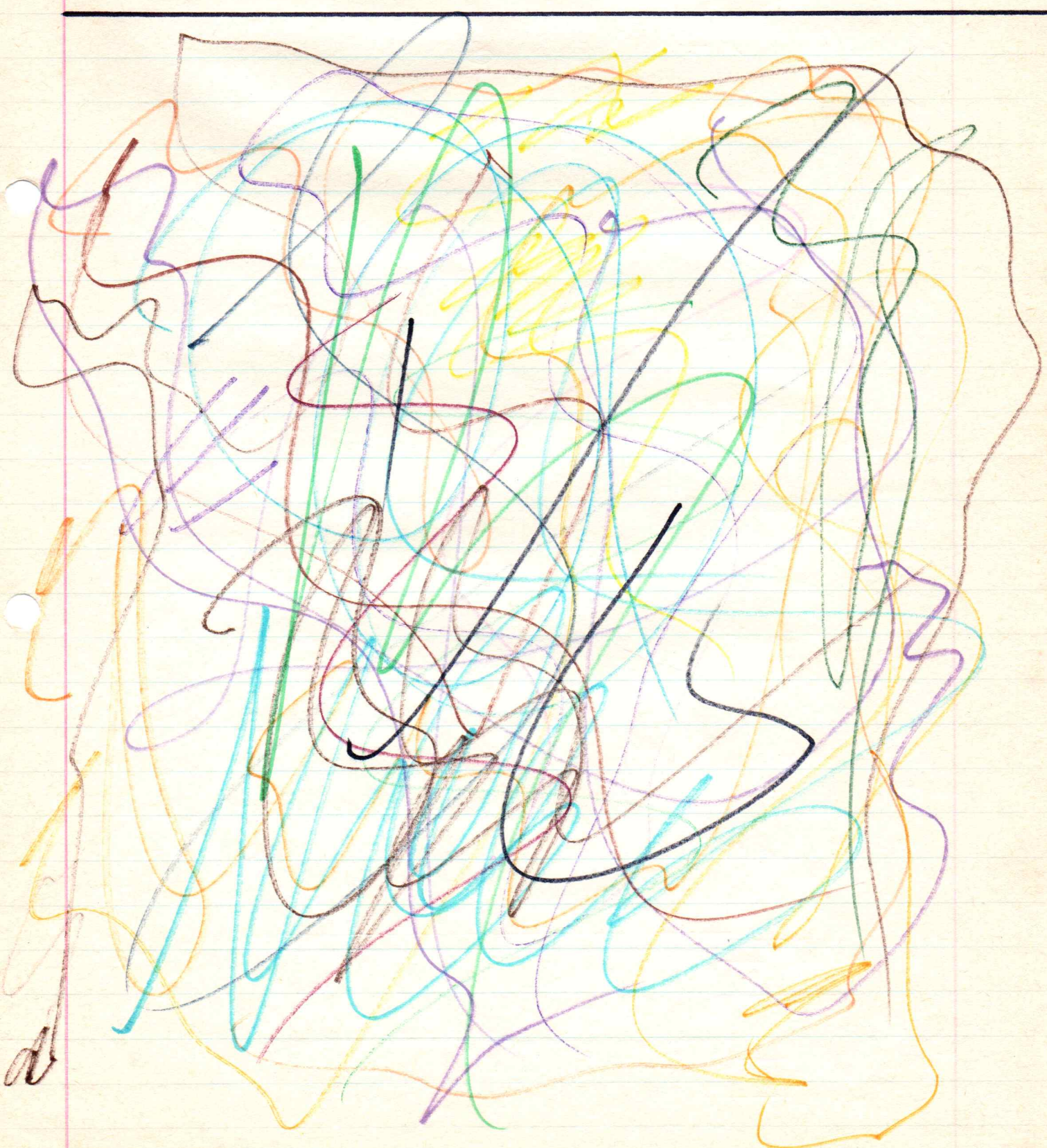


17.

conclusion: 1. If an object is less dense than a liquid it will float on top of the liquid

2. If an object is more dense than a liquid it will sink

3. If an object is as dense as the liquid it will float within the liquid.

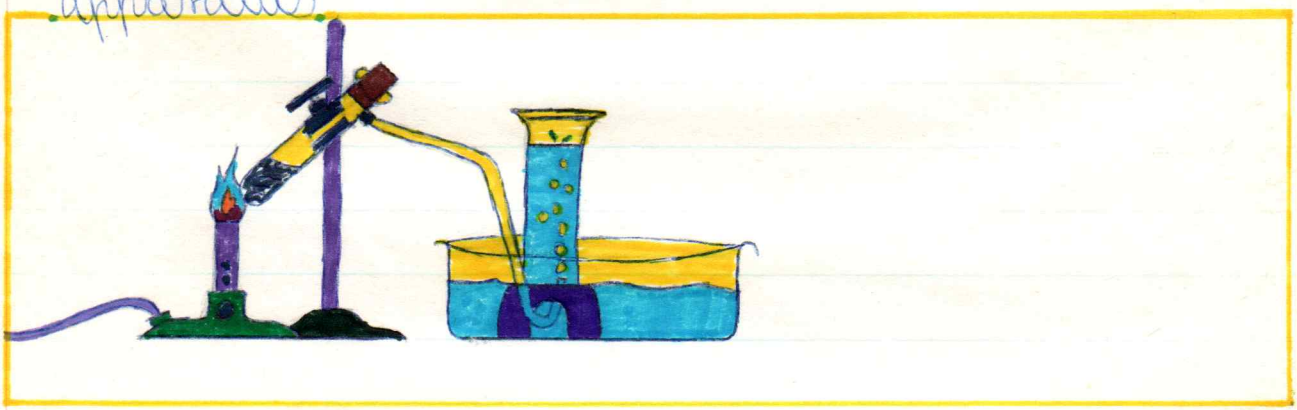


18.

Producing oxygen in a laboratory

Method: Put Potassium chlorate (white) and Manganese dioxide (black) in a test tube. Then close with cork. Then connect a glass pipe to the test tube outlet. The misdture is then heated and oxygen gass is yielded, this is collected under water using a bekive shelf so it does not mixe with air

Apparatus:

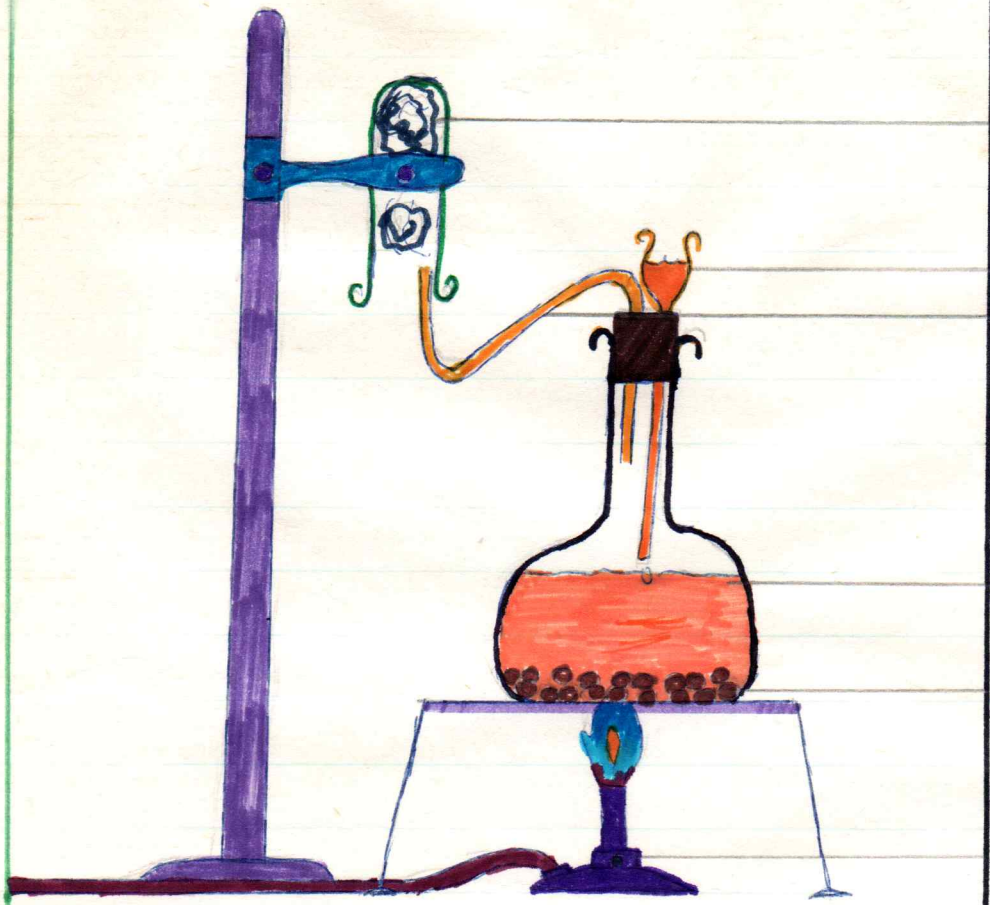


Properties of Oxygen

1. Oxygen is a gass.
2. It has no colour.
3. It has no taste or smell.
4. It is a very good reactive.

19. # Producing Hydrogen

Method shown in Apparatus:



Properties of Hydrogen

1. Hydrogen is a gas.
2. It has no taste.
3. It has no smell.
4. It has a very low density.
5. It burns in air.

21. To investigate the spreading and mixing of liquids (Liquids)

1. Method: Drop potassium permanganate threw a dropping funnel into a cylinder of water.

Result: The colorful solution speads threw the water or it defuses.

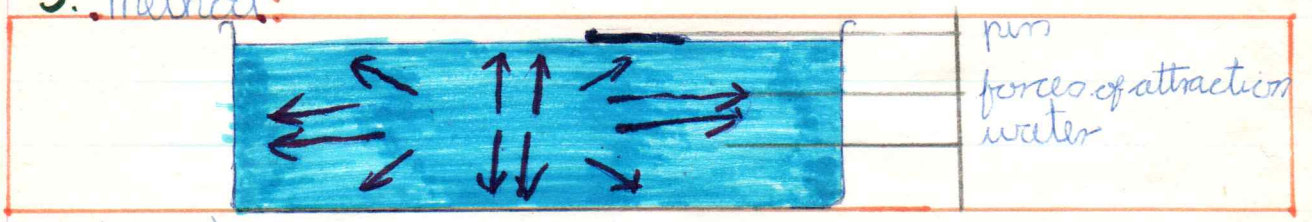
To investigate if there are any spaces between the particles of liquids

2. Method: By using a syring we can find out if theres space in liquids by pushing the handle when the critlet is closed.

Result: The syring's handle moves frontword showing theres space between liquids

To investigate the forces within a liquid

3. Method:



Result: The surface of the water behaves has a stretched elastic, there seems to be forces of attraction between the water particles, thats why the pin floated on top of the water. These forces of attraction are weakened if detergent is added to the water and the pin will sink.

1. Decomposition of a compound by heating: When the mercury (II) oxide (compound) was heated decomposition took place to form mercury liquid and oxygen gass (element) NB! NB! NB!

---

2. Decomposition of a compound by electric current (heated): The elements of water are hydrogen and oxygen. When you pass an electric current threw acidified water then it decomposes into its elements. Bubbles of oxygen form at the positive electrode (the anode) and bubbles of hydrogen collect at the negative electrode (the cathode).

---

3. Formation of a compound by heating: Sulphur + Iron $\triangle$ = Iron Sulphide.

---

4. To investigate electrical conductors in metals and non-metals: Metals are good conductors of electricity and non-metals are not.

---

5. To investigate conductors of heat in Metals and non-metals: Metals (eg iron) are good conductors of heat. While non-metals are insulators of heat.

---

6. To find the density of some irregular solids: Fill a cylinder half way of water (50 mm). Then measure the mass of the object after that put the object in the cylinder with the water now read the new readings that will give you the volume, all you have to do is to find the density (~~mass g / volume cm³~~) = density

---

7. To find the density of water: Put exactly 10 cm of water in a cylinder, this means there's 10 cm^3 (volume). Now to find the mass measure the cylinder by itself then with the water together after that subtract and find the density using the method. 

---

8. To show liquids will float on liquids of greater density and will sink in liquids of lesser density. If you put liquid that are different, something will happen for example kopper Sulphate will float on mercury. Summary: 1: If an object is less dense than a liquid it will float on top of the liquid. 2: If an object is more dense than a liquid, it will sink. 3: If an object is as dense as the liquid, it will float within the liquid.

---

9. To investigate the spreading and mixing of gasses: The ether gass as spread throughout the class and mixed with the air - because it diffuses by itself.

---

10. To find out if there are any spaces between the particles of air: By using the syring we can find out if there's space in air by blocking the output and pushing the handle, it will move inwards a bit. (This proves there's space in air)

---

11. To see how smoke particles behave in still air: The movement of smoke particles is caused by moving air particles which constintly bump each other.
(Baownian movement)

---

12. To investigate if there are any spaces between the particles of a liquid: Same method and result as number 10.

13. To investigate the spreading and mixing of liquids: Drop potassium permanganate threw a dropping funnel into a cylinder of water and the colourful solution spreads threw the water. (difusion)

---

14. To see wether Brownian motion - occurs in liquids: Little particles of aluminium were thrown in water then stirred, it was left for a day then put a bright light shinning in a dark room and saw very tiny particles of aluminium floating around.

---

15. To investigate the forces within a liquid: The surface of the water behaves has a streched elastic, there seems to be forces of attraction between the water particles, thats why the pin floated on top of the water. These forces of attraction are weakened if detergent is added and sinks.

---

16. To investigate the spreading and mixing of solids: Potasium permanganate was put in a petri dish with water, and was put over the overhead projector and we saw it mix with a liquid.

---

17. To grow a crystal: The solid copper sulphate crystals were first dissolved in water. Heat then was used to dissolve the reaction, resulting in a saturated solution.

---

18. To separate a mixture using a magnet: To separate metals from non-metals.

---

19. To separate a mixture by filtration and evaporation: Filtration may be used in sand and water if they are a mixture just pass it threw filtering paper and evaporation can be used in salt and water, by heating the water until it evaporates and the solid will be left behind.

---

20. To separate a mixture using a separating funnel: It can be used in liquids with defferent densities, by letting the less dense liquid behind and letting the heavy dense threw into the beacker.

---

21. To separate the parts of mixture by distilation: This can be used for sea water and when heated the pure water will come out of a liebig condencer wich cools the evaporated water and the salt is left behind.

---

22. Put some chlorate of potash on your hand but first put it in a mortar and pound it into powder, then take half powdered sulphur and throw it with the others and rub them togetker pretty briskly and it causes thunder and lightning.

---

23. Put some lycopodium in your hand than put it in a little tube right before a candle than blow gently, this causes mimic lightning to fly about.

---

24. Pore half chlorate of potash and half fine white sugar into a tea cup than drop ondy a little bit of sulphuric acid and it causes a flame.

---

25. Get some hot water and put it in a test tube and dissolve some crystal of bluestone or sulphate of copper, after this is done put a blade of a knife inside it causes a cote of rust around the blade but can be cleaned with bits of rag.

---

26 Producing oxygen: Put Potassium chlorate (white) and Manganese dioxide (black) in a test tube. Then close with a cork. Then connect a glass pipe to the test tube outlet. The mixture is heated and oxygen gass is yeielded this is collected under water using a below shelf so it does not mix with air

---

27 Producing oxygen: Heat some Potassium permanganate (two teaspoons) in a test tube and oxygen is produced. To prove this put a glowing splint in the test tube if it ignites then you now oxygen is present.

Producing Hydrogen

Put zink into a flask then put a cork with a dropping funnel, with a outlet tube to collect the flamable Hydrogen but firstly pore hydrochloric acid threw dropping funnel before being heated. (dangerous) NB.

1. Inflorenscence !

Definision: This is in most plants flowers occur in clusters on the branches or on the stem (spibelet)
(This is the floral arrangement of the plants!) N.B. the inflorescence stalk is called pedicelate.

2. Solitary flowers !

In solitary flowers the main stem and sometem-
-es its branches end in a solitary flower.
eg. Poppy, hibiscus, anemone, tulip, cup of Gold.
These flowers are all conspicuous and in some cases rather large so that their colours are clearly visible to insects for pollination. These are bisexual flowers

3. Multiflorenscence

1. The Raceme: In the raceme the individual flowers occur on a common flower stalk.
The youngest flower is situated near the tip of the stalk while the mature are situated near the base of the inflorenscence and are ready to be pollinated.
eg. aloe, red-hot Poker, snapdragon, chinkerinchee.

2. The Spike: The spike is similar to the raceme but the individual flowers are sessile, that is they do not have a flower stalk.
eg. rye, wheat, barley.
There are raceme plants with spibelets these are called panicles

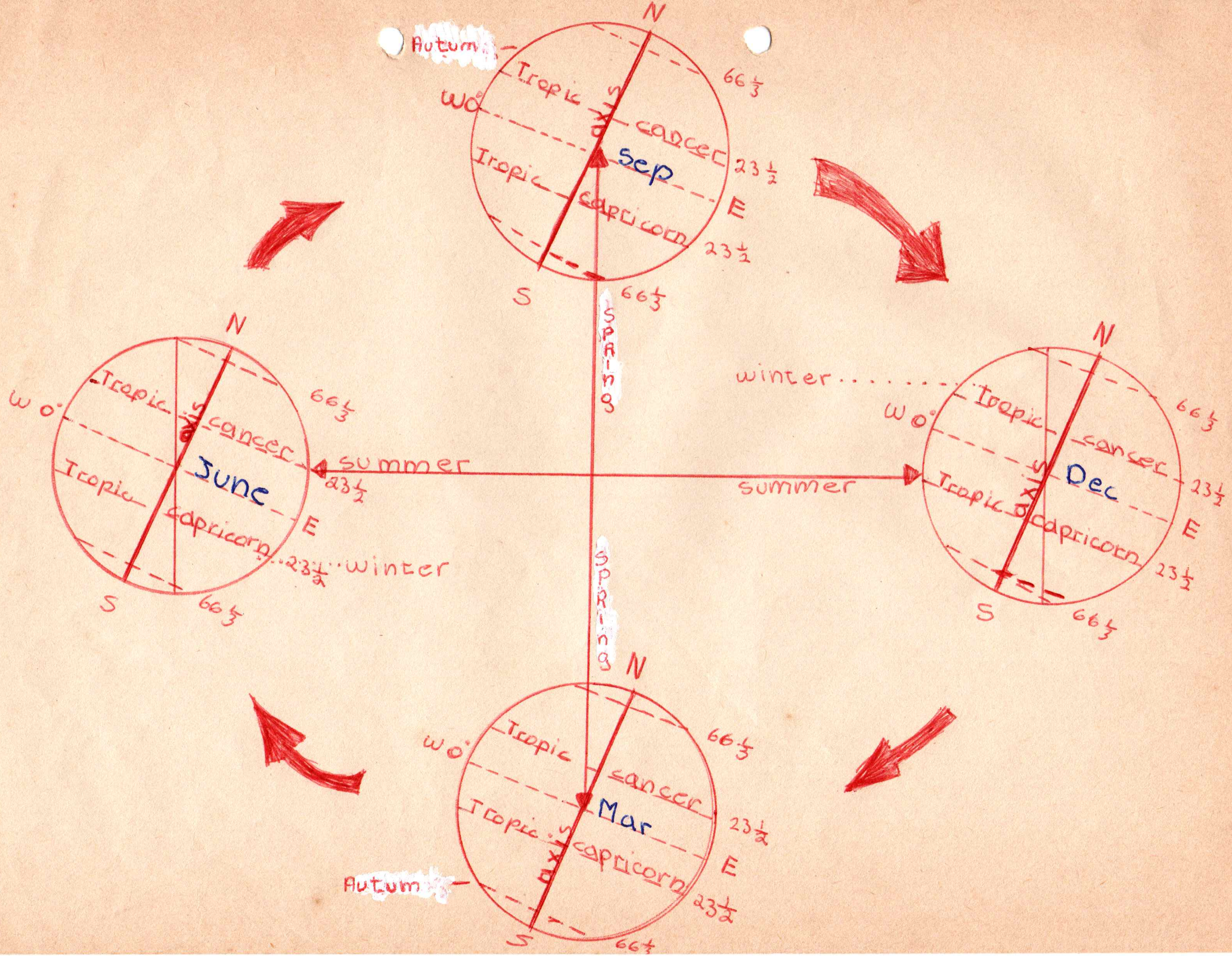
3 The Capitulum: In capitulum the flowers are born on a common flat and enlarged rece-
-ptacle. eg. daisies, dahlias, asters, thistles, Zinnias,

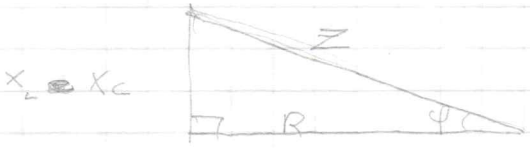
- dandelion, sunflower, artichoke, Lettuce.

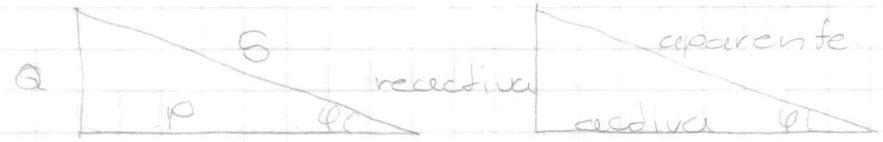
Review!

Summary!

1. Flowers occur either in solitary form or as an inflorescence
2. Solitary flowers are often large, conspicuous and brightly coloured. In an inflorescence the individual flowers may be small but all the flowers of the inflorescence together are conspicuous.
3. In a raceme the individual stalked flowers occur on a common flower stalk and the individual flowers open from the bottom of the raceme upwards (aloe).
4. In a spike the individuals sessile flowers also occur on a common stalk (wheat). In many grasses the inflorescence is a branched raceme of spikelets.
5. In a capitulum the ray florets and disc florets occur on a common enlarged receptacle (sunflower)
6. The external structure of a hibiscus (solitary flower), an aloe (raceme), a grass (spike), and the sunflower (capitulum)


Autum
Sep
Tropic
cancer
Tropic
capricorn
axis
W 0°
N
S
E
66 1/3
23 1/2
June
Dec
Mar
Spring
summer
winter





$P = R I^2 \cos\alpha$ ou $\cos = \frac{\text{cat. ady}}{\text{hip}}$

$Q = (X_L - X_C) I^2$ sendo var $\boxed{I\ U}$ depende $\text{sen} = \frac{\text{cat. oposto}}{\text{hip}}$

$S = Z I^2$

$X_L = \omega L$

$= 2\pi f L$ $\quad f = Hz$, $L = H$

$X_C = \frac{1}{\omega C}$

$= \frac{1}{2\pi f C}$ $\quad f = Hz$, $C = f$

$U_L = X_L I$

$U_R = R I$

$U_Z = Z I$

$Z^2 = R^2 + X_L^2$

$U_Z^2 = U_R^2 + U_L^2$

$S^2 = P^2 + Q^2$