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Concepts of Geometry

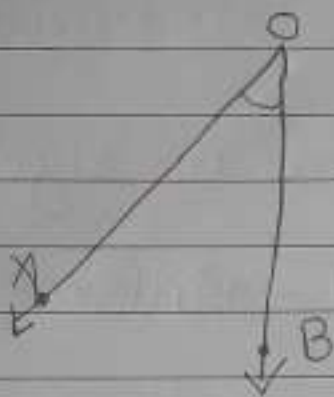
Ex → 9a

1. Fill in the blanks.

- a.) A point indicates ~~position~~ but has no size.
- b.) A line segment has two end points.
- c.) A ray has one end point.
- d.) A line has no end points.
- e.) When two rays meet at a common point they form an angle.
- f.) Two arms of an angle meet at the ~~vert~~ vertex of the angle.

2) Name the angles in three different ways.
Also, name the different parts for each angle.

a)

Name = $\angle AOB, \angle BOA, \angle O$

Vertex = O

Arms = $\overrightarrow{OA}, \overrightarrow{OB}$

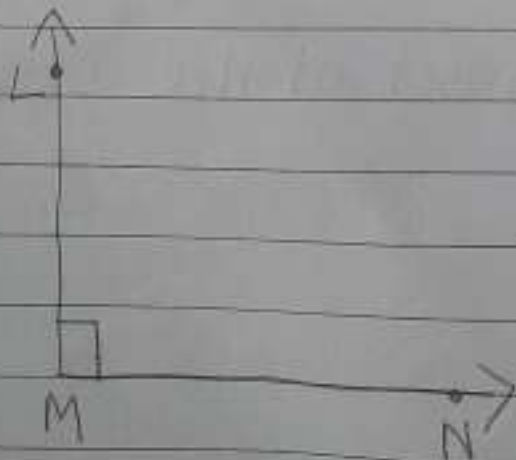
b)

Name = $\angle DEF, \angle FED, \angle E$

Vertex = E

Arms = $\overrightarrow{DE}, \overrightarrow{EF}$

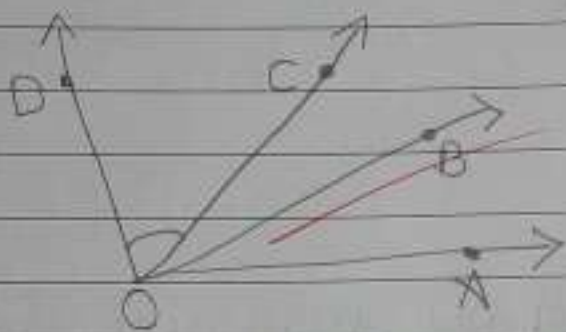
c)

Name = $\angle LMN, \angle NML,$

Vertex = M

Arms = $\overrightarrow{LM}, \overrightarrow{MN}$

3) Name the angle shaded in pink in the given diagram. Also, name the vertex and the arms of the angle.



Name = $\angle DOC$, $\angle COD$, $\angle O$

Vertex = O

Arms = $\overrightarrow{OD}$, $\overrightarrow{OC}$

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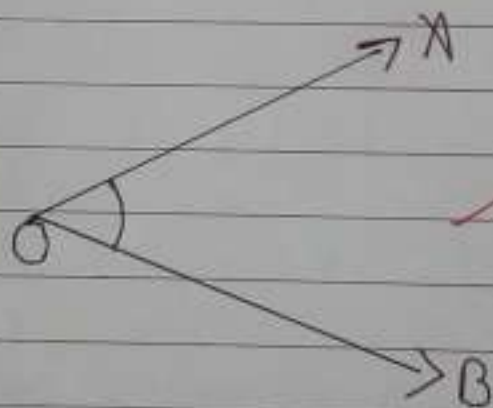
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Types of angles

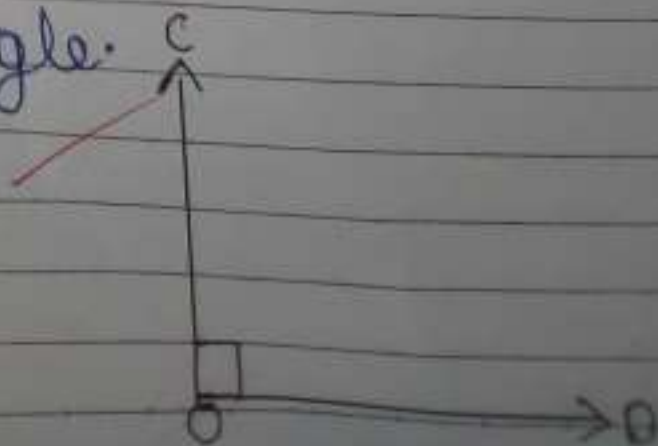
1. Zero angle $\rightarrow$ When no angle is formed between two arms $\sim$ they are called zero angle.



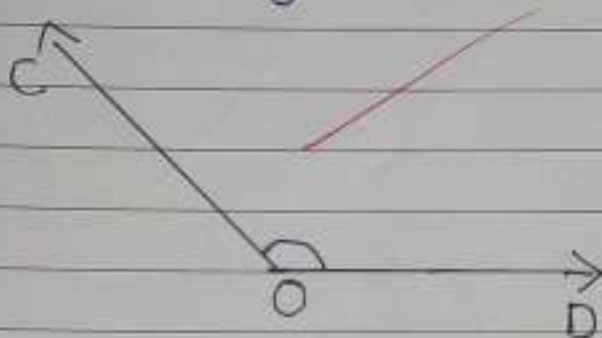
2. Acute angle $\rightarrow$ An angle whose measure is less than 90° is called ~~an~~ acute angle.



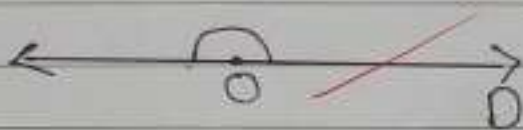
3. Right angle $\rightarrow$ An angle whose measure is 90° is called right angle.



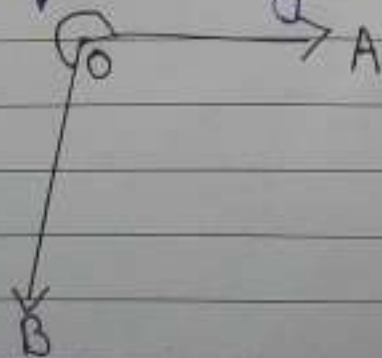
4.) Obtuse angle $\rightarrow$ An angle whose measure is more than 90° and less than 180° is called obtuse angle.



5.) Straight angle $\rightarrow$ An angle whose measure is 180° is called straight angle.



6.) Reflex angle $\rightarrow$ An angle whose measure is more than 180° but less than 360° is called reflex angle.



⑦ Complete angle $\rightarrow$ An angle whose measure is 360° is called complete angle:



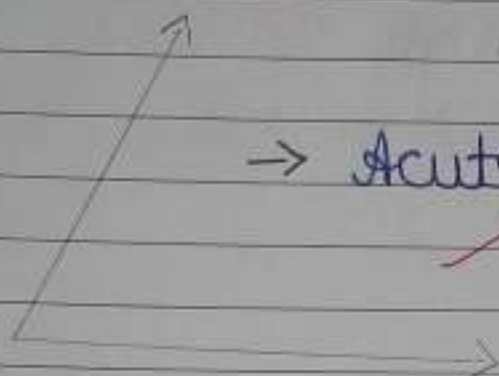
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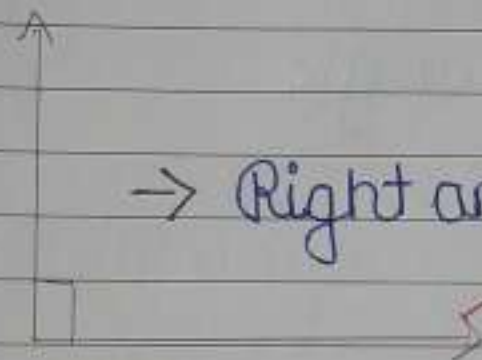
Ex → 9b

1) a)



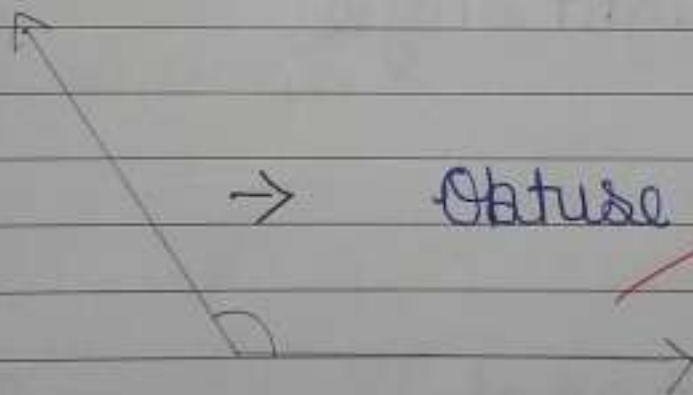
→ Acute angle

b)



→ Right angle

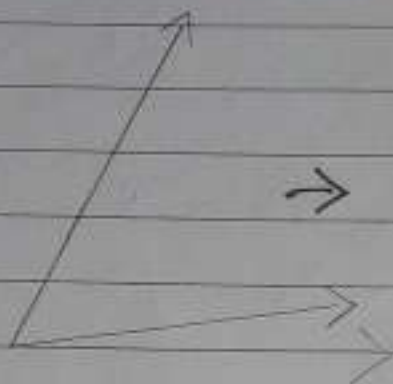
c)



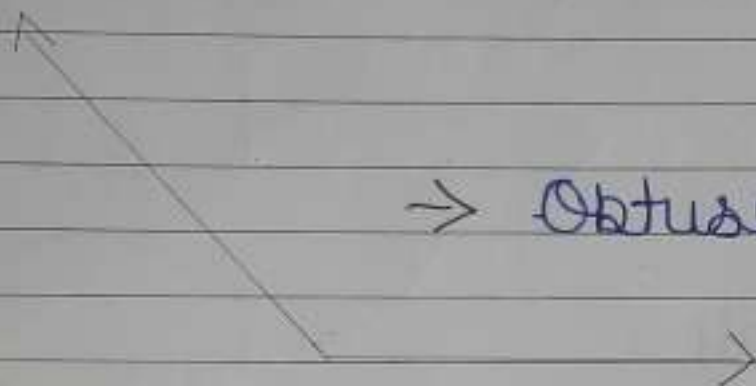
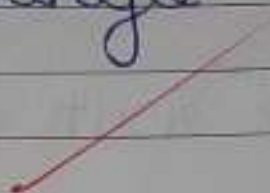
→ Obtuse angle

d) <  > Straight angle

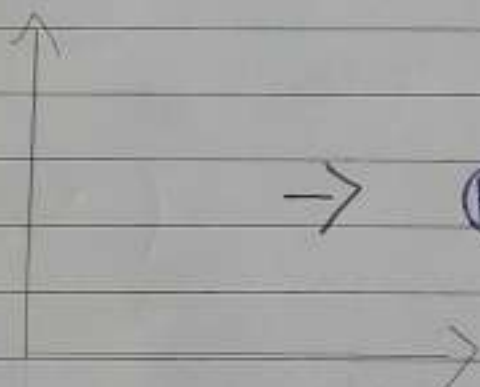
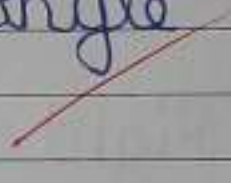
a.)



→ Acute angle



→ Obtuse angle



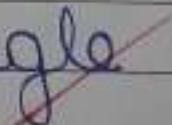
→ Right angle

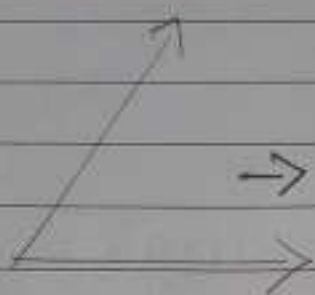


b.)



→ Right angle





→ Acute angle



→ Obtuse angle

4.) a) Right angle

b) Straight angle

c) Right angle

5.) a)

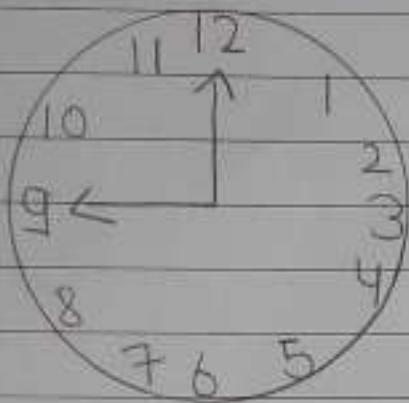


→ 1:00 Acute angle

b)

 $\rightarrow$ 5:45 ~~Obtuse angle~~

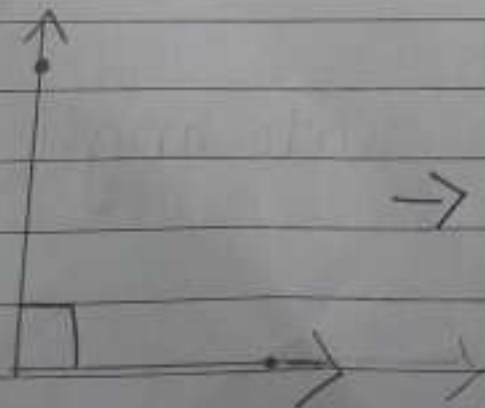
c)

 $\rightarrow$ 9:00 ~~Right angle~~

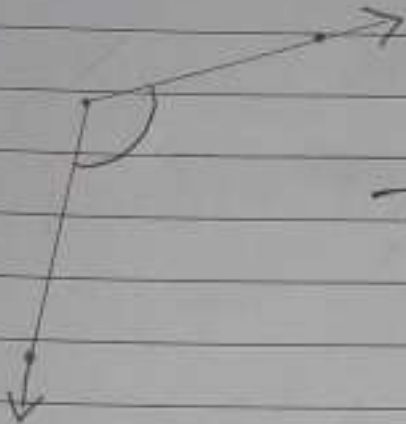
3) a)

 $\rightarrow$ ~~Acute angle~~

b)

 $\rightarrow$ ~~Right angle~~

c)



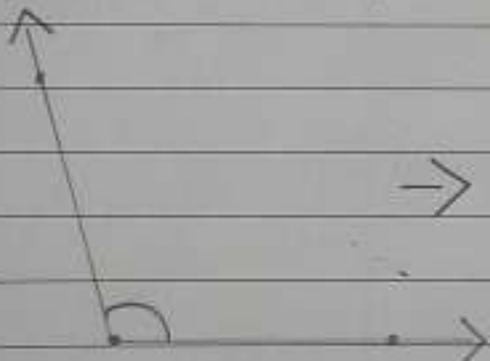
→ Obtuse angle

d)



→ Straight angle

e)



→ Obtuse angle

f)



→ Zero angle

Types of lines

① Horizontal line $\rightarrow$ 

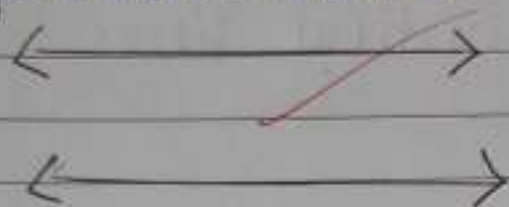
② Vertical line $\rightarrow$ 

③ Slanting line $\rightarrow$ 

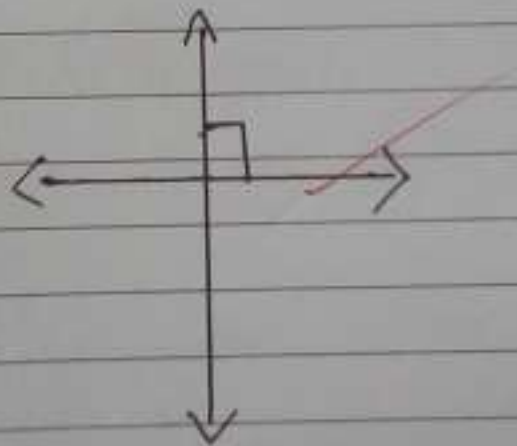
④ Intersecting lines $\rightarrow$ When two lines cross each other at a point they are called intersecting lines.



- ⑤ Parallel lines $\rightarrow$ Two lines which are always equidistant from one another they are called parallel lines.



- ⑥ Perpendicular lines $\rightarrow$ When two lines intersect at 90° they are called perpendicular lines.



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$180^\circ \rightarrow 90^\circ$
~~~~~

1) a) The pink line is a horizontal line.

b) The blue line is a ~~slanting~~ line.

2) a)



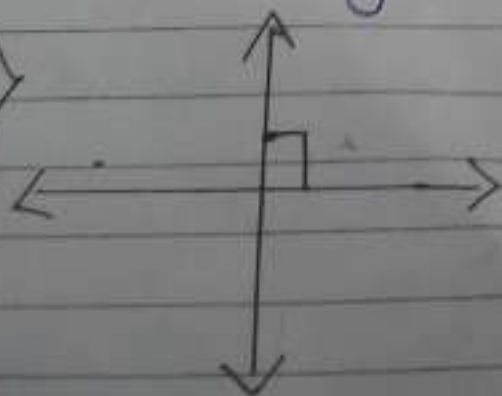
Parallel lines

b)

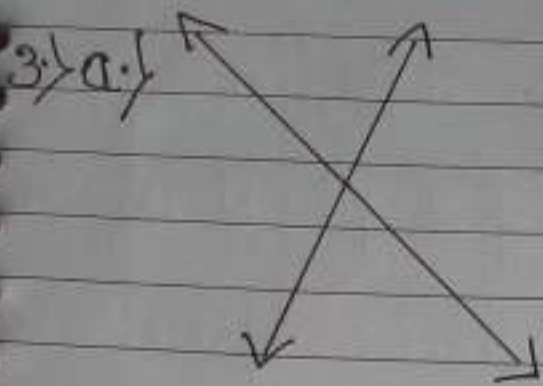


Intersecting lines

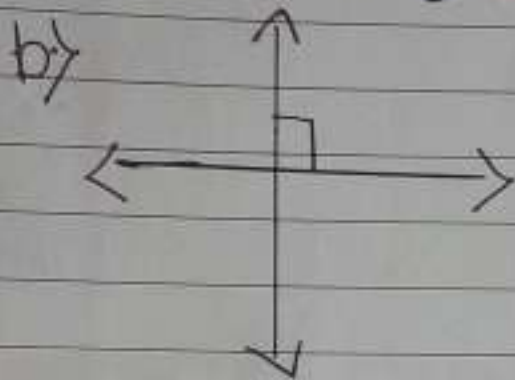
c)



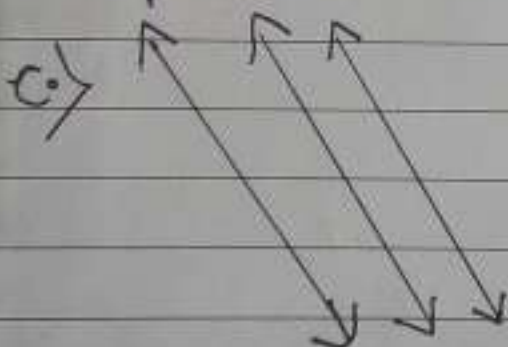
Perpendicular lines



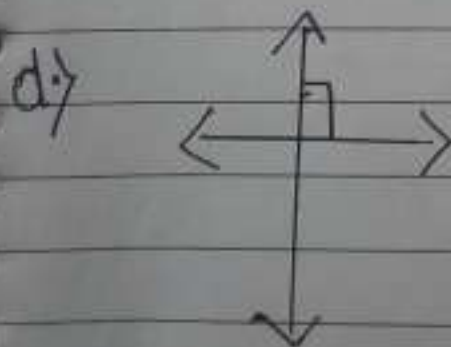
Intersecting lines



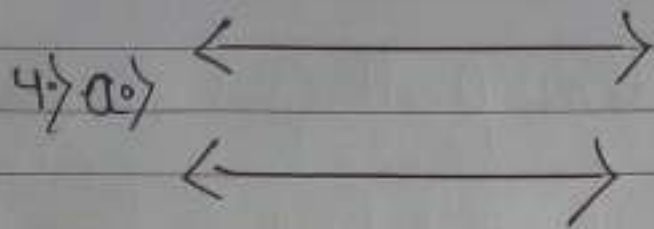
Perpendicular lines



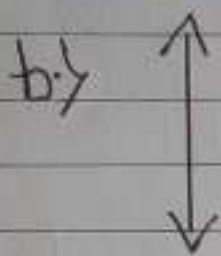
Parallel lines



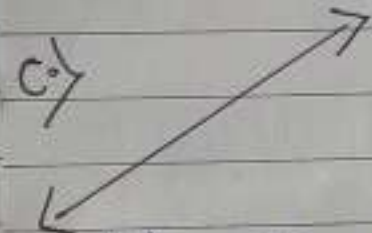
Perpendicular lines



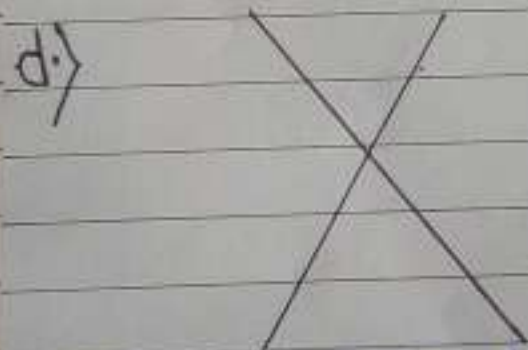
Parallel lines



Vertical lines



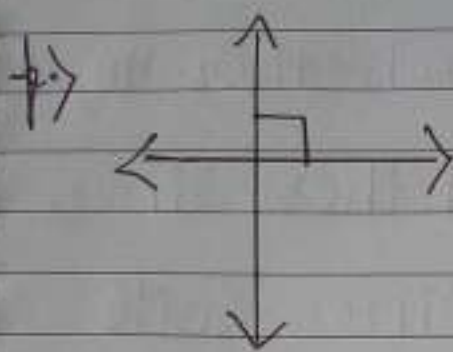
Slanting line



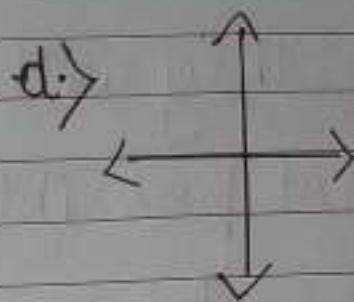
Intersecting line



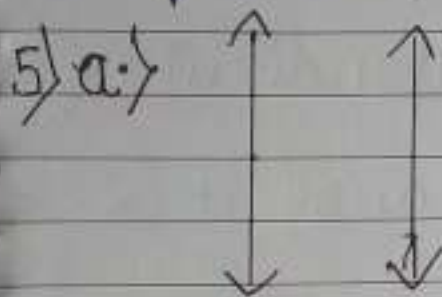
Horizontal line



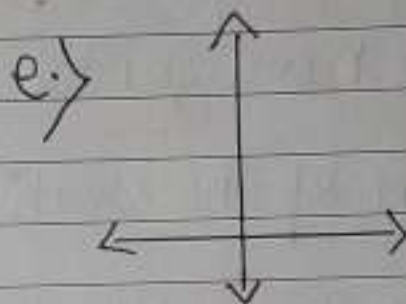
Perpendicular lines



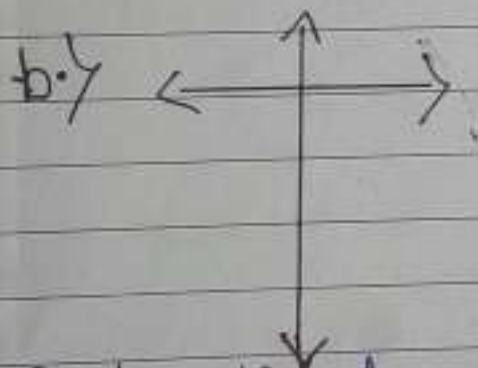
Perpendicular lines



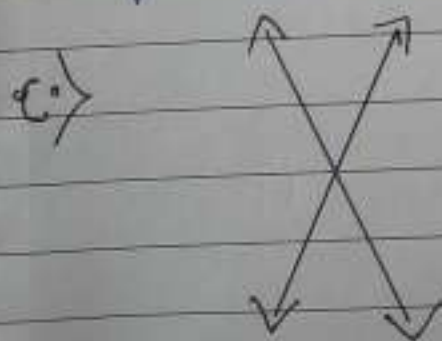
Parallel lines



Perpendicular lines



Perpendicular lines



Intersecting lines

- a) Yes, they will intersect each other. No, it is not possible to say that these lines are parallel because these lines will intersect each other at some point.
- b) Yes, the horizontal line is perpendicular to each of the vertical lines because it is making  $90^\circ$  with both the lines.

c)

GoodSingh22/10/19