

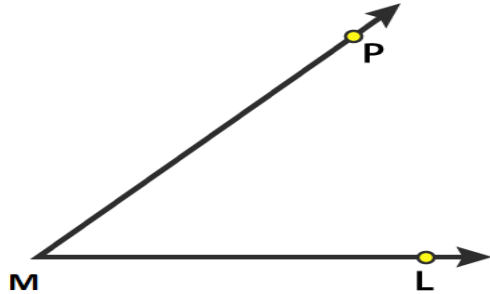
**EXERCISE 11.1**

1. Give three examples of angles from your environment.

Solution:

The three examples of angles are  
 The angle formed by the two adjacent fingers of our hand  
 The angle formed by two adjacent walls of a room  
 The angle formed by the hour hand and minute hand of a clock.

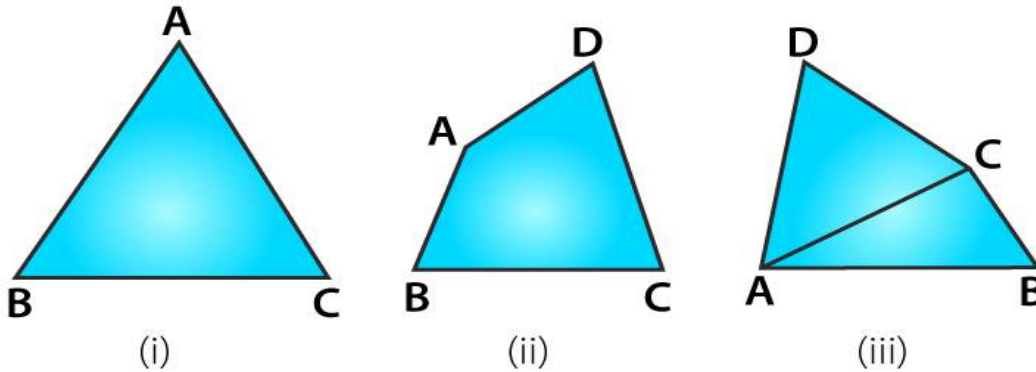
2. Write the arms and the vertex of  $\angle LMP$  given in Fig. 11.14.



Solution:

The vertex of  $\angle LMP$  is M and the arms are ML and MP.

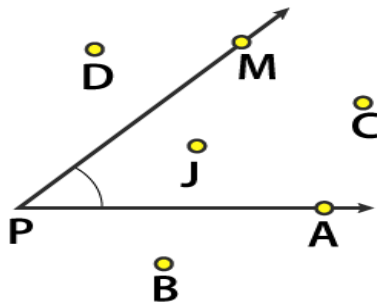
3. How many angles are formed in the figures 11.15 (i), (ii) and (iii)? Name them.



Solution:

- (i) Three angles are formed in figure (i) namely  $\angle ABC$ ,  $\angle ACB$  and  $\angle BAC$ .
- (ii) Four angles are formed in figure (ii) namely  $\angle ABC$ ,  $\angle BCD$ ,  $\angle CDA$  and  $\angle DAB$ .
- (iii) Eight angles are formed in figure (iii) namely  $\angle ABC$ ,  $\angle BCD$ ,  $\angle CDA$ ,  $\angle DAB$ ,  $\angle CAB$ ,  $\angle CAD$ ,  $\angle BCA$  and  $\angle ACD$ .

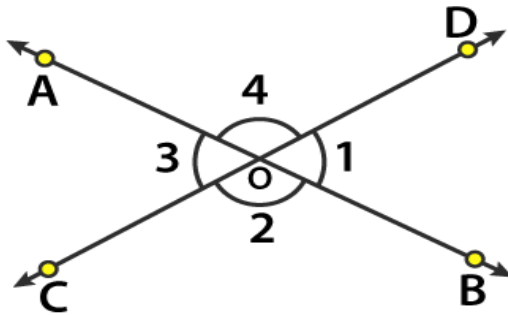
4. In Fig. 11.16, list the points which are: (i) in the interior of  $\angle P$  (ii) in the exterior of  $\angle P$  and (iii) lie on  $\angle P$ .



**Solution:**

- (i) The points which are in the interior of  $\angle P$  are J and C.
- (ii) The points which are in the exterior of  $\angle P$  are B and D.
- (iii) The points which lie on  $\angle P$  are A, P and M.

**5. In Fig. 11.17, write another name for:**

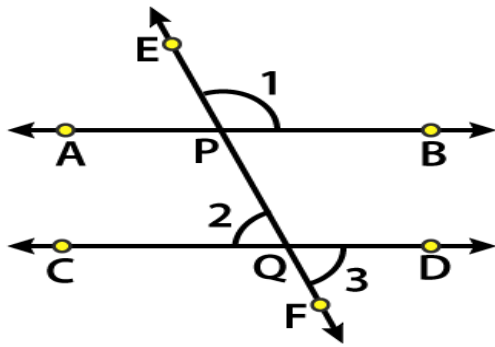


- (i)  $\angle 1$
- (ii)  $\angle 2$
- (iii)  $\angle 3$
- (iv)  $\angle 4$

**Solution:**

- (i) From the figure, another name for  $\angle 1$  is  $\angle BOD$  or  $\angle DOB$ .
- (ii) From the figure, another name for  $\angle 2$  is  $\angle BOC$  or  $\angle COB$ .
- (iii) From the figure, another name for  $\angle 3$  is  $\angle COA$  or  $\angle AOC$ .
- (iv) From the figure, another name for  $\angle 4$  is  $\angle AOD$  or  $\angle DOA$ .

**6. In Fig. 11.18, write another name for:**

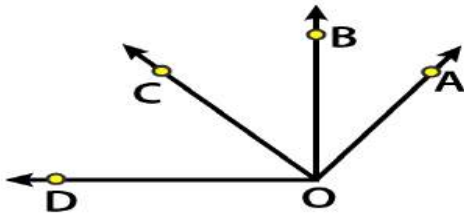


- (i)  $\angle 1$
- (ii)  $\angle 2$
- (iii)  $\angle 3$

**Solution:**

- (i) From the figure, another name for  $\angle 1$  is  $\angle EPB$  or  $\angle BPE$ .
- (ii) From the figure, another name for  $\angle 2$  is  $\angle CQP$  or  $\angle PQC$ .
- (iii) From the figure, another name for  $\angle 3$  is  $\angle DQF$  or  $\angle FQD$ .

**7. In Fig. 11.19, which of the following statements are true:**



- (i) Point B is the interior of  $\angle AOB$ .
- (ii) Point B is the interior of  $\angle AOC$ .
- (iii) Point A is the interior of  $\angle AOD$ .
- (iv) Point C is the exterior of  $\angle AOB$ .
- (v) Point D is the exterior of  $\angle AOC$ .

**Solution:**

- (i) False. B lies on  $\angle AOB$ .
- (ii) True
- (iii) False. A lies on  $\angle AOD$ .
- (iv) True
- (v) True

**8. Which of the following statements are true:**

- (i) The vertex of an angle lies in its interior.
- (ii) The vertex of an angle lies in its exterior.

(iii) The vertex of an angle lies on it.

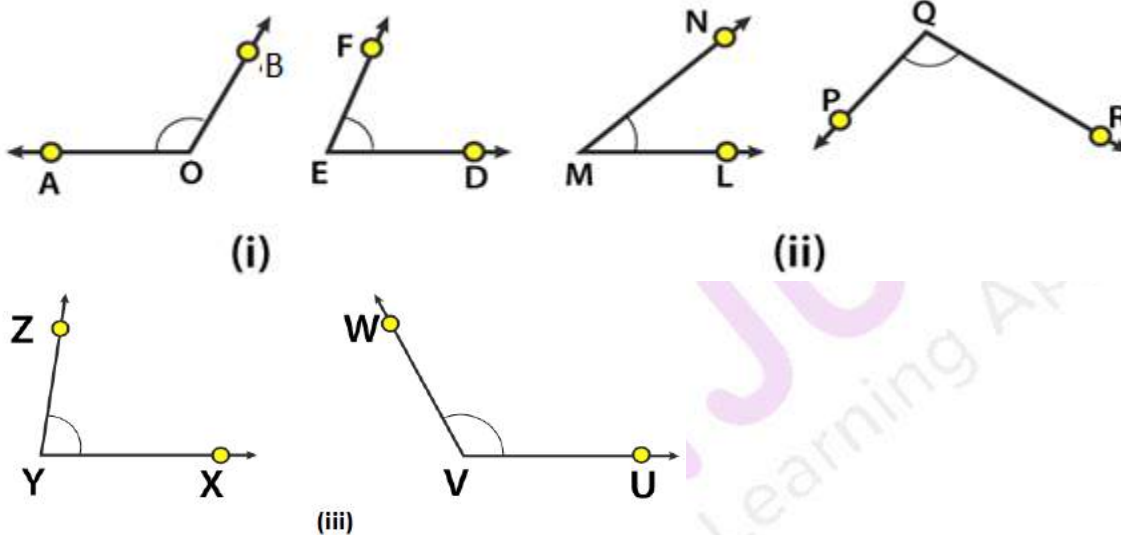
**Solution:**

(i) False.

(ii) False.

(iii) True.

9. By simply looking at the pair of angles given in Fig. 11.20, state which of the angles in each of the pairs is greater:



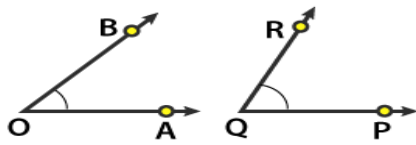
**Solution:**

(i) From the figure we know that  $\angle AOB > \angle DEF$ .

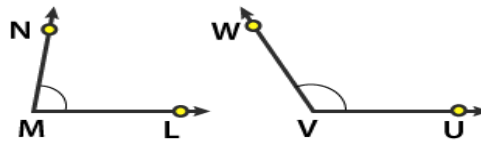
(ii) From the figure we know that  $\angle PQR > \angle LMN$ .

(iii) From the figure we know that  $\angle UVW > \angle XYZ$ .

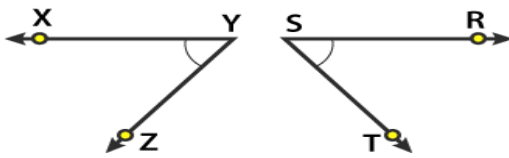
10. By using tracing paper compare the angles in each of the pairs given in Fig. 11.21.



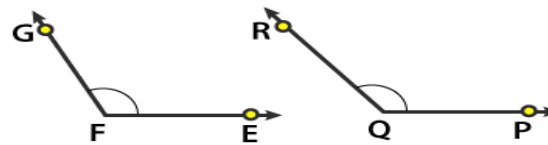
(i)



(ii)



(iii)



(iv)

**Solution:**

(i) From the figure we know that  $\angle PQR > \angle AOB$ .

(ii) From the figure we know that  $\angle UVW > \angle LMN$ .

(iii) From the figure we know that  $\angle RST > \angle XYZ$ .

(iv) From the figure we know that  $\angle PQR > \angle EFG$ .