

**EXERCISE 11.2**

**1. Give two examples each of right, acute and obtuse angles from your environment.**

**Solution:**

The two examples of right angle are:

Two adjacent walls of a room and adjacent edges of a book

The two examples of acute angle are:

Two adjacent sides of the letter Z and two adjacent fingers of our hand.

The two examples of obtuse angles are:

Two sloping sides of a roof and two adjacent blades of a fan.

**2. An angle is formed by two adjacent fingers. What kind of angle will it appear?**

**Solution:**

The angle formed by two adjacent fingers will appear as acute angle.

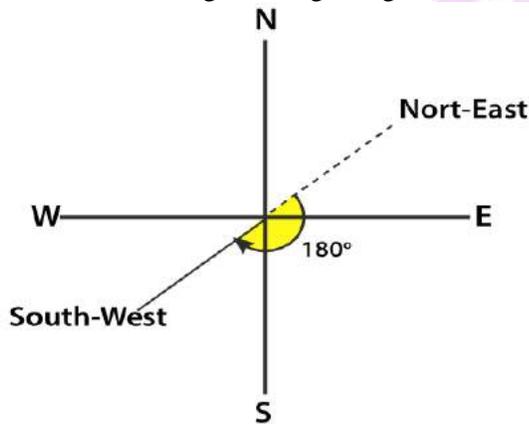
**3. Shikha is rowing a boat due north-east. In which direction will she be rowing if she turns it through:**

**(i) a straight angle**

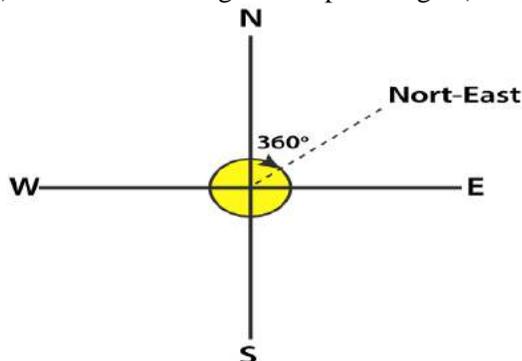
**(ii) a complete angle.**

**Solution:**

(i) If she turns through a straight angle ( $180^\circ$ ) she will be rowing in the South-West direction.



(ii) If she turns through a complete angle ( $360^\circ$ ) she will be rowing in North-East direction.



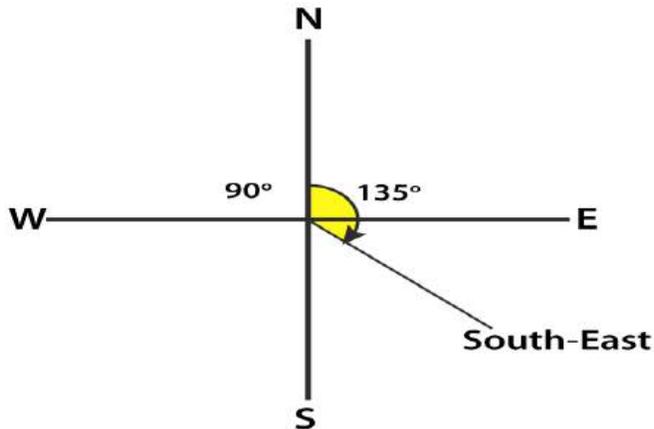
4. What is the measure of the angle in degrees between:

(i) North and West?

(ii) North and South?

(iii) North and South- East?

Solution:



The measure of the angle in degrees between:

(i) North and West is  $90^\circ$ .

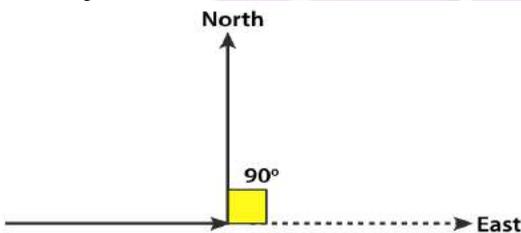
(ii) North and South is  $180^\circ$ .

(iii) North and South-East is  $135^\circ$ .

5. A ship sailing in river Jhelam moves towards east. If it changes to north, through what angle does it turn?

Solution:

If the ship moves from east to north direction, the angle it turns is  $90^\circ$ .



6. You are standing in a class-room facing north. In what direction are you facing after making a quarter turn?

Solution:

By making a quarter turn ( $90^\circ$ ), I will be facing towards east if I turn to my right hand and if I turn to my left hand, I will be facing towards west.

7. A bicycle wheel makes four and a half turns. Find the number of right angles through which it turns.

Solution:

We know that the wheel of a bicycle covers  $360^\circ$  in one turn.

It can be written as

$$360/90 = 4 \text{ right angles}$$

We know that in four and half turns the wheel turns by  $4(4.5) = 18$  right angles

Hence, the number of right angles through which it turns is 18.

**8. Look at your watch face. Through how many right angles does the minute-hand moves between 8: 00 O' clock and 10: 30 O' clock?**

**Solution:**

We know that the time interval between 8: 00 O' clock and 10: 30 O' clock is two and half hours

The minute hand turns  $360^\circ$  in 1 hour

$$360/90 = 4 \text{ right angles}$$

So in two and half hours the minute hand turns by  $2.5(4) = 10$  right angles.

Hence, the minute hand turns by 10 right angles.

**9. If a bicycle wheel has 48 spokes, then find the angle between a pair of adjacent spokes.**

**Solution:**

The central angle in a bicycle is  $360^\circ$  which consists of 48 spokes.

So the angle between a pair of adjacent spokes =  $360/48 = 7.5^\circ$

Hence, the angle between a pair of adjacent spokes is  $7.5^\circ$ .

**10. Classify the following angles as acute, obtuse, straight, right, zero and complete angle:**

(i)  $118^\circ$

(ii)  $29^\circ$

(iii)  $145^\circ$

(iv)  $165^\circ$

(v)  $0^\circ$

(vi)  $75^\circ$

(vii)  $180^\circ$

(viii)  $89.5^\circ$

(ix)  $30^\circ$

(x)  $90^\circ$

(xi)  $179^\circ$

(xii)  $360^\circ$

(xiii)  $90\frac{1}{2}^\circ$

**Solution:**

(i)  $118^\circ$  is an obtuse angle.

(ii)  $29^\circ$  is an acute angle.

(iii)  $145^\circ$  is an obtuse angle.

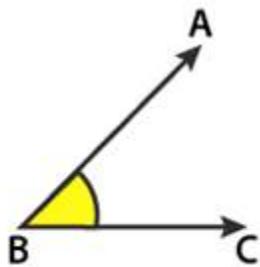
(iv)  $165^\circ$  is an obtuse angle.

(v)  $0^\circ$  is a zero angle.

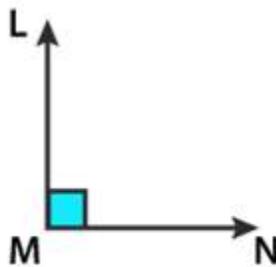
- (vi)  $75^\circ$  is an acute angle.
- (vii)  $180^\circ$  is a straight angle.
- (viii)  $89.5^\circ$  is an acute angle.
- (ix)  $30^\circ$  is an acute angle.
- (x)  $90^\circ$  is a right angle.
- (xi)  $179^\circ$  is an obtuse angle.
- (xii)  $360^\circ$  is a complete angle.
- (xiii)  $90\frac{1}{2}^\circ$  is an obtuse angle.

**11. Using only a ruler, draw an acute angle, a right angle and an obtuse angle in your notebook and name them.**

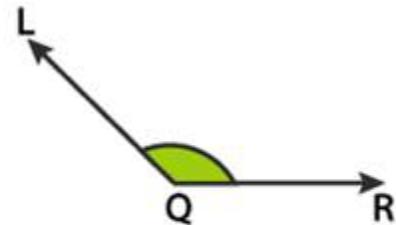
**Solution:**



Acute angle  $\angle ABC$



Right angle  $\angle LMN$



Obtuse angle  $\angle LQR$

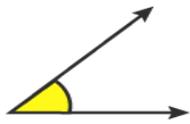
**12. State the kind of angle, in each case, formed between the following directions:**

- (i) East and West
- (ii) East and North
- (iii) North and North-East
- (iv) North and South-East

**Solution:**

- (i) East and West directions form a straight angle ( $180^\circ$ ).
- (ii) East and North directions form a right angle ( $90^\circ$ ).
- (iii) North and North-East directions form an acute angle ( $45^\circ$ ).
- (iv) North and South-East directions form an obtuse angle ( $135^\circ$ ).

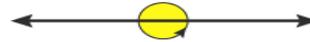
**13. State the kind of each of the following angles:**



(i)



(ii)



(iii)



(iv)



(v)

**Solution:**

(i) Acute angle which measures between  $0^\circ$  and  $90^\circ$ .

(ii) Obtuse angle which measures between  $90^\circ$  and  $180^\circ$ .

(iii) Straight angle which measures  $180^\circ$ .

(iv) Right angle which measures  $90^\circ$ .

(v) Complete angle which measures  $360^\circ$ .