

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.

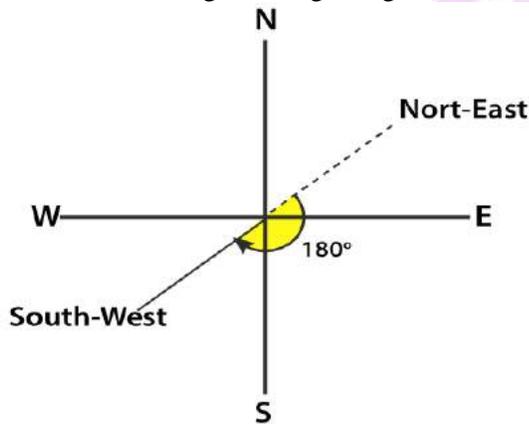
3. Shikha is rowing a boat due north-east. In which direction will she be rowing if she turns it through:

(i) a straight angle

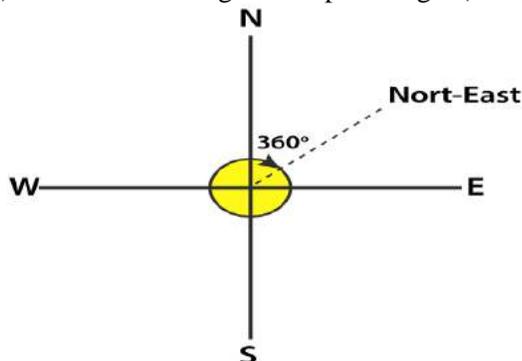
(ii) a complete angle.

Solution:

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



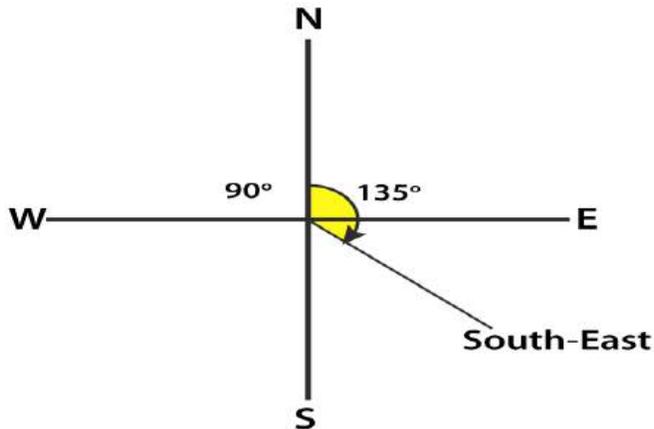
(ii) If she turns through a complete angle (360°) she will be rowing in North-East direction.



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:



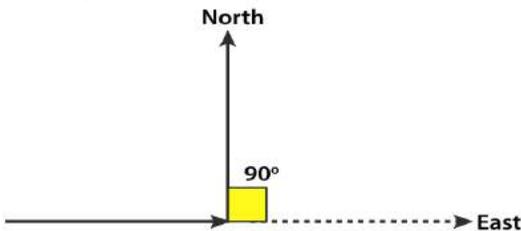
The measure of the angle in degrees between:

- (i) North and West is 90° .
- (ii) North and South is 180° .
- (iii) North and South-East is 135° .

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° .



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°), 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° 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° 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° 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° .

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

(i) 118°

(ii) 29°

(iii) 145°

(iv) 165°

(v) 0°

(vi) 75°

(vii) 180°

(viii) 89.5°

(ix) 30°

(x) 90°

(xi) 179°

(xii) 360°

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

Solution:

(i) 118° is an obtuse angle.

(ii) 29° is an acute angle.

(iii) 145° is an obtuse angle.

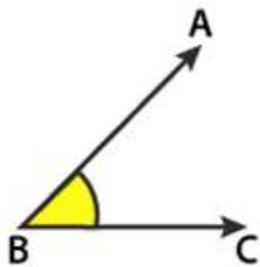
(iv) 165° is an obtuse angle.

(v) 0° is a zero angle.

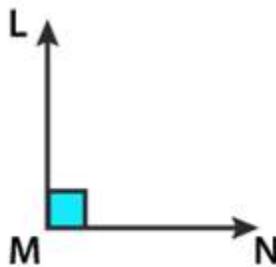
- (vi) 75° is an acute angle.
- (vii) 180° is a straight angle.
- (viii) 89.5° is an acute angle.
- (ix) 30° is an acute angle.
- (x) 90° is a right angle.
- (xi) 179° is an obtuse angle.
- (xii) 360° is a complete angle.
- (xiii) $90\frac{1}{2}^\circ$ is an obtuse angle.

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

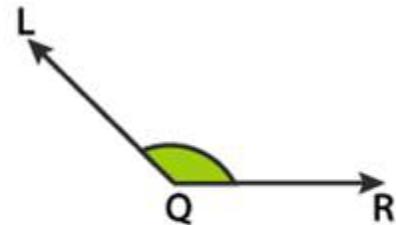
Solution:



Acute angle $\angle ABC$



Right angle $\angle LMN$



Obtuse angle $\angle LQR$

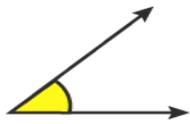
12. State the kind of angle, in each case, formed between the following directions:

- (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°).
- (ii) East and North directions form a right angle (90°).
- (iii) North and North-East directions form an acute angle (45°).
- (iv) North and South-East directions form an obtuse angle (135°).

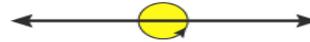
13. State the kind of each of the following angles:



(i)



(ii)



(iii)



(iv)



(v)

Solution:

(i) Acute angle which measures between 0° and 90° .

(ii) Obtuse angle which measures between 90° and 180° .

(iii) Straight angle which measures 180° .

(iv) Right angle which measures 90° .

(v) Complete angle which measures 360° .