



## NCERT SOLUTIONS FOR CLASS 6 MATHS UNDERSTANDING ELEMENTARY SHAPES EX 5.2

### Exercise 5.2

#### Question 1:

What fraction of a clock wise revolution does the hour hand of a clock turn through when it goes from

(a) 3 to 9 (b) 4 to 7 (c) 7 to 10

(d) 12 to 9 (e) 1 to 10 (f) 6 to 3

Answer:

We may observe that in 1 complete clockwise revolution, the hour hand will rotate by  $360^\circ$ .

(a) When the hour hand goes from 3 to 9 clockwise, it will rotate by 2 right angles or  $180^\circ$ .

$$\text{Fraction} = \frac{180^\circ}{360^\circ} = \frac{1}{2}$$



(b) When the hour hand goes from 4 to 7 clockwise, it will rotate by 1 right angle or  $90^\circ$ .

$$\text{Fraction} = \frac{90^\circ}{360^\circ} = \frac{1}{4}$$



(c) When the hour hand goes from 7 to 10 clockwise, it will rotate by 1 right angle or  $90^\circ$ .

$$\text{Fraction} = \frac{90^\circ}{360^\circ} = \frac{1}{4}$$



(d) When the hour hand goes from 12 to 9 clockwise, it will rotate by 3 right angles or  $270^\circ$ .

$$\text{Fraction} = \frac{270^\circ}{360^\circ} = \frac{3}{4}$$



(e) When the hour hand goes from 1 to 10 clockwise, it will rotate by 3 right angles or  $270^\circ$ .

$$\text{Fraction} = \frac{270^\circ}{360^\circ} = \frac{3}{4}$$



(f) When the hour hand goes from 6 to 3 clockwise, it will rotate by 3 right angles or  $270^\circ$ .

$$\text{Fraction} = \frac{270^\circ}{360^\circ} = \frac{3}{4}$$



**Question 2:**

Where will the hand of a clock stop if it

- (a) Starts at 12 and makes  $\frac{1}{2}$  of a revolution, clockwise?
- (b) Starts at 2 and makes  $\frac{1}{2}$  of a revolution, clockwise?
- (c) Starts at 5 and makes  $\frac{1}{4}$  of a revolution, clockwise?
- (d) Starts at 5 and makes  $\frac{3}{4}$  of a revolution, clockwise?

**Answer:**

In 1 complete clockwise revolution, the hand of a clock will rotate by  $360^\circ$ .

- (a) If the hand of the clock starts at 12 and makes  $\frac{1}{2}$  of a revolution clockwise, then it will rotate by  $180^\circ$  and hence, it will stop at 6.



- (b) If the hand of the clock starts at 2 and makes  $\frac{1}{2}$  of a revolution clockwise, then it will rotate by  $180^\circ$  and hence, it will stop at 8.



- (c) If the hand of the clock starts at 5 and makes  $\frac{1}{4}$  of a revolution clockwise, then it will rotate by  $90^\circ$  and hence, it will stop at 8.

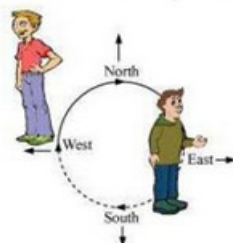


- (d) If the hand of the clock starts at 5 and makes  $\frac{3}{4}$  of a revolution clockwise, then it will rotate by  $270^\circ$  and hence, it will stop at 2.



**Question 3:**

Which direction will you face if you start facing



- (a) East and make  $\frac{1}{2}$  of a revolution clockwise?
- (b) East and make  $1\frac{1}{2}$  of a revolution clockwise?
- (c) West and make  $\frac{3}{4}$  of a revolution anti-clockwise?

(d) South and make one full revolution?

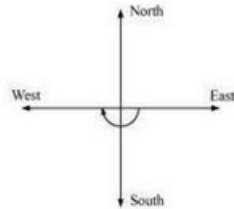
(Should we specify clockwise or anti-clockwise for this last question? Why not? )

Answer:

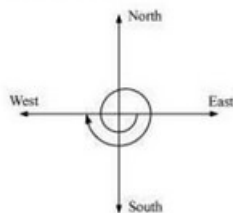
If we revolve one complete round in either clockwise or anti-clockwise direction, then we

will revolve by  $360^\circ$  and the two adjacent directions will be at  $90^\circ$  or  $\frac{1}{4}$  of a complete revolution away from each other.

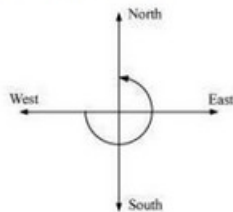
(a) If we start facing East and make  $\frac{1}{2}$  of a revolution clockwise, then we will face the West direction.



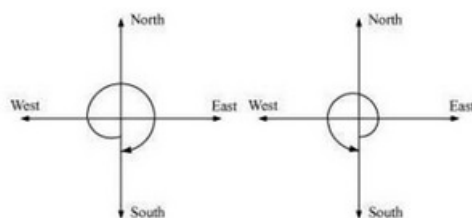
(b) If we start facing East and make  $1\frac{1}{2}$  of a revolution clockwise, then we will face the West direction.



(c) If we start facing West and make  $\frac{3}{4}$  of a revolution anti-clockwise, then we will face the North direction.



(d) If we start facing South and make a full revolution, then we will again face the South direction.



In case of revolving by 1 complete round, the direction in which we are revolving does not matter. In both cases, clockwise or anti-clockwise, we will be back at our initial position.

#### Question 4:

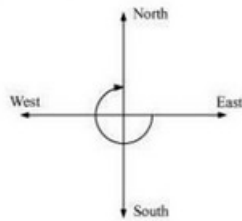
What part of a revolution have you turned through if you stand facing

- (a) East and turn clockwise to face north?
- (b) South and turn clockwise to face east?
- (c) West and turn clockwise to face east?

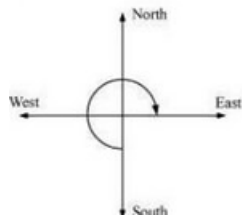
If we revolve one complete round in either clockwise or anti-clockwise direction, then we

will revolve by  $360^\circ$  and the two adjacent directions will be at  $90^\circ$  or  $\frac{1}{4}$  of a complete revolution away from each other.

(a) If we start facing East and turn clockwise to face North, then we have to make  $\frac{3}{4}$  of a revolution.



(b) If we start facing South and turn clockwise to face east, then we have to make  $\frac{3}{4}$  of a revolution.



(b) The hour hand of a clock revolves by  $180^\circ$  or 2 right angles when it goes from 2 to 8.



(c) The hour hand of a clock revolves by  $180^\circ$  or 2 right angles when it goes from 5 to 11.



(d) The hour hand of a clock revolves by  $90^\circ$  or 1 right angle when it goes from 10 to 1.



(e) The hour hand of a clock revolves by  $270^\circ$  or 3 right angles when it goes from 12 to 9.



- (f) The hour hand of a clock revolves by  $180^\circ$  or 2 right angles when it goes from 12 to 6.



**Question 6:**

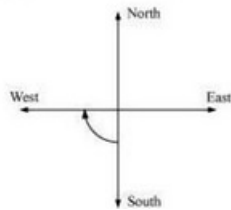
How many right angles do you make if you start facing

- (a) South and turn clockwise to west?
- (b) North and turn anti-clockwise to east?
- (c) West and turn to west?
- (d) South and turn to north?

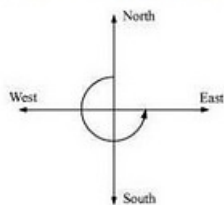
Answer:

If we revolve one complete round in either clockwise or anti-clockwise direction, then we will revolve by  $360^\circ$  or 4 right angles and the two adjacent directions will be at  $90^\circ$  or 1 right angle away from each other.

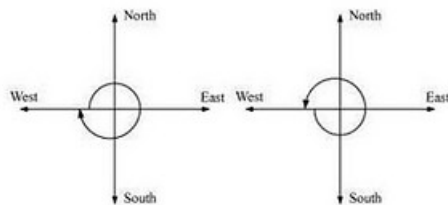
- (a) If we start facing South and turn clockwise to West, then we make 1 right angle.



- (b) If we start facing North and turn anti-clockwise to East, then we make 3 right angles.



- (c) If we start facing West and turn to West, then we make 1 complete round or 4 right angles.



\*\*\*\*\* END \*\*\*\*\*