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 360º.

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

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 90º.

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 90º.

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 270º.

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 270º.

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°.

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°.

(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° and hence, it will stop at 6.

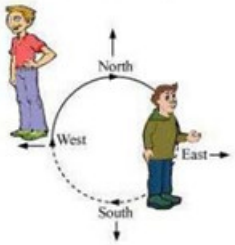
(b) If the hand of the clock starts at 2 and makes $\frac{1}{2}$ of a revolution clockwise, then it will rotate by 180° and hence, it will stop at 8.

(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° 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° 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?

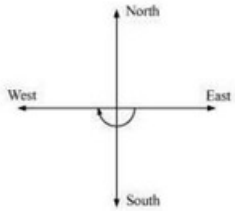
(d) South and make one full revolution?

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

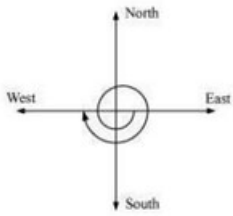
Answer:

If we revolve one complete round in either clockwise or anti-clockwise direction, then we will revolve by 360º and the two adjacent directions will be at 90º or $\frac{1}{4}$ of a complete revolution away from each other.

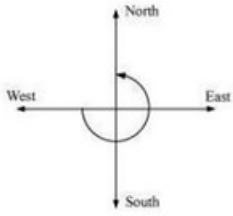
(a) If we start facing East and make $\frac{1}{2}$ of a revolution clockwise, then we will face the West direction.



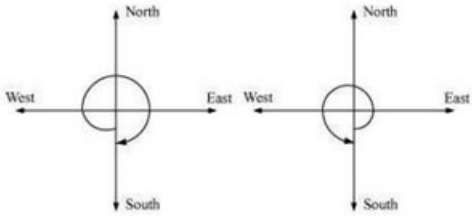
(b) If we start facing East and make $1\frac{1}{2}$ of a revolution clockwise, then we will face the West direction.



(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

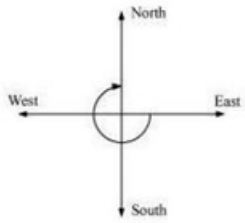
(a) East and turn clock wise to face north?

(b) South and turn clockwise to face east?

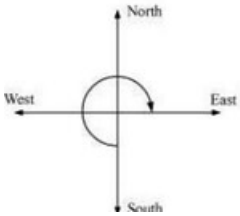
(c) West and turn clockwise to face east?

If we revolve one complete round in either clockwise or anti-clockwise direction, then we will revolve by 360º and the two adjacent directions will be at 90º 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 180º or 2 right angles when it goes from 2 to 8.

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

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

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

(f) The hour hand of a clock revolves by 180º 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?

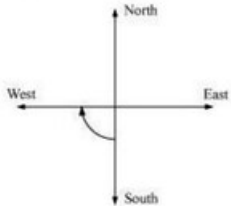
(c) West and turn to west?

(d) South and turn to north?

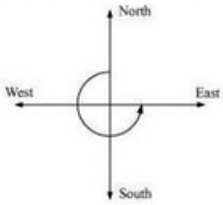
Answer:

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

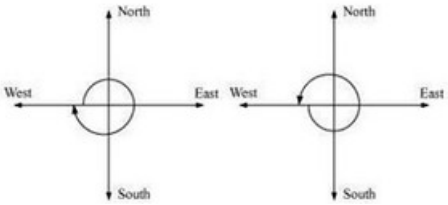
(a) If we start facing South and turn clockwise to West, then we make 1 right angle.



(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 **********