NCERT Solutions For Class 6 Maths Understanding Elementary Shapes Ex 5.2

Question 1.

What fraction of a clockwise 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

Solution:

(a) 3 to 9

$9 - 3 = 6 \div 12 = \frac{1}{2}$ of a revolution

(b) 4 to 7

$7 - 4 = 3 \div 12 = \frac{1}{4}$ of a revolution

(c) 7 to 10

$10 - 7 = 3 \div 12 = \frac{1}{4}$ of a revolution

(d) 12 to 9 i.e., 0 to 9

$9 - 0 = 9 \div 12 = \frac{3}{4}$ of a revolution

(e) 1 to 10

$10 - 1 = 9 \div 12 = \frac{3}{4}$ of a revolution

(f) 6 to 3 i.e., 6 to 12 and then 12 to 3

6 to 12 = 12 − 6 = 6 and 12 to 3 = 0 to 3 = 3 − 0 = 3

$6 + 3 = 9 \div 12 = \frac{3}{4}$ of a revolution

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 $\frac{1}{2}$ of a revolution, clockwise?

(d) starts at 5 and makes $\frac{1}{2}$ of a revolution, clockwise?

Solution:

(a) Starting from 12 and making $\frac{1}{2}$ of a revolution, the clock hand stops at 6.

(b) Starting from 2 and making $\frac{1}{2}$ of a revolution, the clock hand stops at 8.

(c) Starting from 5 and making $\frac{1}{2}$ of a revolution, the clock hand stops at 8.

(d) Starting from 5 and making $\frac{1}{2}$ of a revolution, the clock hand stops at 2.

Question 3.

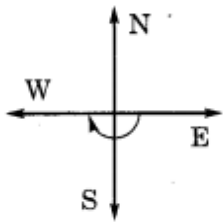Which direction will you face if you start facing

(a) east and make $\frac{1}{2}$ of a revolution clockwise? z

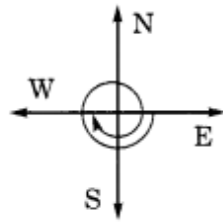(b) east and make $1\frac{1}{2}$ of a revolution clockwise? z

(c) west and make $\frac{3}{4}$ of a revolution anticlockwise?

(d) south and make one full revolution? (Should we specify clockwise or anticlockwise for this last question? Why not?)
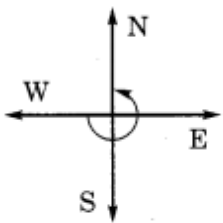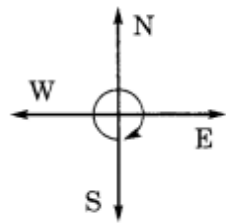
Solution:

West
(a)

West
(b)

North
(c)

South
(d)

Taking one full revolution we will reach back to the original (starting) position. Therefore, it make no difference whether we turn clockwise or anticlockwise.

Question 4.

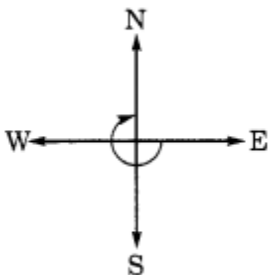What part of a revolution have you turned through if you stand facing

(a) east and turn clockwise to face north?
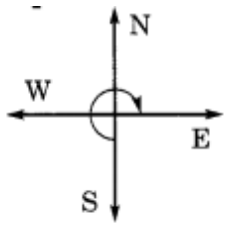
(b) south and turn clockwise to face east?

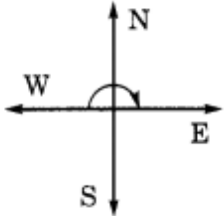(c) west and turn clockwise to face east?

Solution:

(a) If we start from east and reach at north (turning clockwise) $\frac{3}{4}$ of a revolution is required.

(b) If we start from south turning clockwise to face east, $\frac{3}{4}$ of a revolution is required.

(c) If we start from west turning clockwise to face east, $\frac{1}{2}$ of a revolution is required.
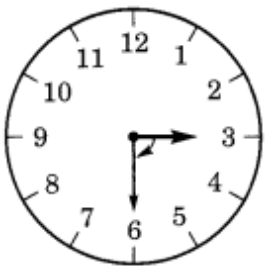

Question 5.
Find the number of right angles turned through by the hour hand of a clock when it goes from
(a)3 to 6
(b) 2 to 8
(c) 5 to 11
(d) 10 to 1
(e) 12 to 9
(f) 12 to 6
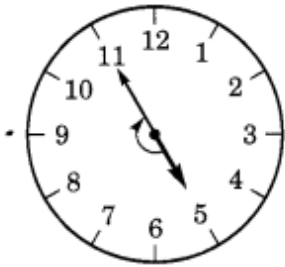
Solution:
(a) 3 to 6

Starting from 3 to 6, the hour hand turns through 1 right angle.

(b) 2 to 8

Starting from 2 to 8, the hour hand turns through 2 right angles.

(c) 5 to 11

Starting from 5 to 11, the hour hand turns through 2 right angles.
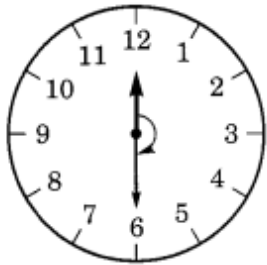
(d) 10 to 1

Starting from 10 to 1, the hour hand turns through 1 right angle.

(e) 12 to 9

Starting from 12 to 9, the hour hand turns through 3 right angles.

(f) 12 to 6

Starting from 12 to 6, the hour hand turns through 2 right angles.

Question 6.
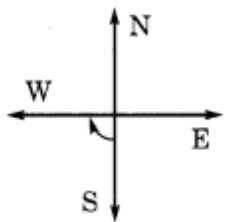How many right angles do you make if you start facing
(a) south and turn clockwise to west?
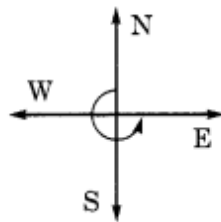(b) north and turn anticlockwise to east?
(c) west and turn to west?
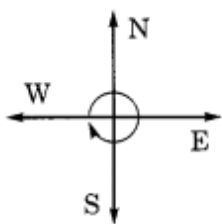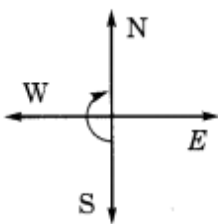(d) south and turn to north?
Solution:

(a)
(1 Right angle)

(b)
(3 Right angles)

(c)
(4 Right angles)

(d)
(2 Right angles)

Question 7.

Where will the hour hand of a clock stop if it starts

(a) from 6 and turns through 1 right angle?

(b) from 8 and turns through 2 right angles?

(c) from 10 and turns through 3 right angles?

(d) from 7 and turns through 2 straight angles?

Solution:

(a) Starting from 6 and turning through 1 right angle, the hour hand stops at 9.

(b) Starting from 8 and turning through 2 right angles, the hour hand stops at 2.

(c) Starting from 10 and turning through 3 right angles, the hour hand stops at 7.

(b) Starting from 7 and turning through 2 right angles, the hour hand stops at 7.