

Clock Questions and Answers

Q 1. In a clock displayed at a wall, the time displayed is 9 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 3 o'clock in the afternoon?

1. 120 degree
2. 160 degree
3. 180 degree
4. 260 degree
5. 150 degree

Answer: (3) 180 degree

Solution:

There is a difference of 6 hours between 9 o'clock in the morning and 3 o'clock in the afternoon
Degrees with which the hour hand clock will rotate = $(360/12) \times 6 = 180$ degree

Q 2. How many minutes are lost by a clock per day, if its hands coincide every 54 minutes?

1. $35 \frac{5}{11}$ minutes
2. $205 \frac{5}{11}$ minutes
3. $305 \frac{5}{11}$ minutes
4. $25 \frac{5}{11}$ minutes
5. Cannot be determined

Answer: (3) $305 \frac{5}{11}$ minutes

Solution:

In 60 minutes, there a total of 55 minute spaces which are covered.

60 minute spaces are covered in $(\frac{60}{55} \times 60)$ minutes = $65 \frac{5}{11}$ minutes

Loss in time in 54 minutes = $(65 \frac{5}{11}) - 54 = 11 \frac{5}{11}$ minutes

Loss of minutes in 24 hours = $11 \frac{5}{11} \times \frac{1}{54} \times 24 \times 60 = 305 \frac{5}{11}$ minutes

Q 3. At what time between 6 a.m. and 6:25 a.m. will the hands of a clock be at right angles?

1. 44 minutes
2. $43 \frac{7}{11}$ minutes
3. $42 \frac{7}{11}$ minutes
4. 45 minutes
5. 42 minutes

Answer: (2) $43 \frac{7}{11}$ minutes

Solution:

Between 6 a.m. and 6:25 a.m., the hands are at 20 minutes space apart

So, to make a right angle between the hands of the clock, 20 more minutes shall be required, which is = $20+20 = 40$ spaces

55 minute spaces are gained in 60 minutes

Thus, 40 minute spaces are gained in $(\frac{60}{55} \times 40) = 43 \frac{7}{11}$ minutes

Q 4. At what time between 7 o'clock and 8 o'clock will the hands of a wall clock point in opposite directions?

1. $54 \frac{6}{11}$ minutes past 7
2. $53 \frac{6}{11}$ minutes past 7
3. $52 \frac{6}{11}$ minutes past 7
4. Cannot be Determined
5. None of the above

Answer: (1) $54 \frac{6}{11}$ minutes past 7

Solution:

At 7 o'clock the hands of the watch are 20 spaces apart

For the hands of the clocks to be in opposite direction, the spaces between them must be 30 minutes
50 minute spaces will have to be gained by the minute hand

55 minute spaces are gained in 60 minutes

Thus, 50 minute spaces are gained in $(\frac{60}{55} \times 50) = 54 \frac{6}{11}$ minutes

Thus, the required time is $54 \frac{6}{11}$ minutes past 7 o'clock

Q 5. Between 4 o'clock and 5 o'clock in the morning, at what time will the hands of a wall clock be in the same straight line? But these lines are not together, i.e., not overlapping each other.

1. $6 \frac{5}{11}$ minutes past 4
2. $5 \frac{5}{11}$ minutes past 4
3. $5 \frac{4}{11}$ minutes past 4
4. $4 \frac{4}{11}$ minutes past 4
5. None of the above

Answer: (2) $5 \frac{5}{11}$ minutes past 4

Solution:

If the two hands of the clock are in a straight line but not together, then they are 30 spaces apart

At 4 o'clock, they are 25 minute spaces apart

Thus, the minutes hand will have to gain only 5 minute spaces

We know, 55 minute spaces are gained in 60 minutes

So, 5 minute spaces are gained in $(\frac{60}{55} \times 5) = \frac{60}{11}$ minutes = $5 \frac{5}{11}$ minutes

So, the two hands will be in a straight line at $5 \frac{5}{11}$ minutes past 4

Q 6. What is the angle between the hour hand and the minute hand when the time is 7:30?

1. 32°
2. 43°
3. 54°
4. 45°
5. 23°

Answer: (4) 45°

Solution:

Angle traced by hour hand in $15/2$ hours = $(\frac{360}{12} \times \frac{15}{2})^\circ = 225$

Angle traced by minute hand in 30 minutes = $\frac{360}{60} \times 30^\circ = 180$

Thus, the angle between the hour and minute hand when the time is 7:30 = $(225-180)^\circ = 45^\circ$

Q 7. At what time between 3 o'clock and 4 o'clock, both the minute and hour hand will coincide with each other? Find the answer in minutes.

1. $16 \frac{7}{11}$ minutes past 3
2. $14 \frac{4}{11}$ minutes past 3
3. $13 \frac{2}{11}$ minutes past 3
4. $16 \frac{4}{21}$ minutes past 3
5. $16 \frac{4}{11}$ minutes past 3

Answer: (5) $16 \frac{4}{11}$ minutes past 3

Solution:

The minute hand is 15 minute spaces apart from the hour hand at 3 o'clock

To coincide with each other it must gain 15 minute spaces

We know, 55 minute spaces are gained in 60 minutes

So, spaces gained in 15 minutes = $\frac{60}{55} \times 15 = 16 \frac{4}{11}$ minutes

Thus, both the hands will coincide at $16 \frac{4}{11}$ minutes past 3

Q 8. If the second hand moves 3600 times, then how many degrees will the minute hand move at the same time?

1. 60°
2. 25°
3. 30°
4. 45°
5. 90°

Answer: (1) 60°

Solution:

1 minute = 60 seconds

Thus, degree at which the minute hand shall move = $3600/60 = 60^\circ$

Q 9. At 5 o'clock a clock ticks 5 times. The time gap between the first and last tick is 40 seconds. How long does the clock tick when it is 12 o'clock in the clock?

1. 60 seconds
2. 95 seconds
3. 110 seconds
4. 105 seconds
5. 75 seconds

Answer: (3) 110 seconds

Solution:

If at 7 o'clock, the clock ticks 5 times, then it means that there were 4 time intervals.

Thus, the time duration of each interval = $40/4 = 10$ seconds

At 12 o'clock, the clock will tick 12 times and the number of intervals shall be 11

So, the total time for which the clock ticks = $11 \times 10 = 110$ seconds

Q 10. At what angle will the hour hand be turned through at 10 minutes past 5, if the clock is started at noon?

1. 160°
2. 122°
3. 132°
4. 150°
5. 155°

Answer: (5) 155°

Solution:

Angle traced by the hour hand in 12 hours = 360°

We know, 5 hours 10 minutes = $31/6$ hours

So, angle traced by the hour hand in 5 hours 10 minutes = $(\frac{360}{12} \times \frac{31}{6}) = 155$

Thus, 155° angle is formed when the hour hand be turned through at 10 minutes past 5 and the clock is started at noon

Q 11. What is the ratio of 15 minutes to 1 hour?

1. 1:2
2. 3:5
3. 5:20
4. 3:14
5. 5:21

Answer: (3) 5:20

Solution:

1 hour = 60 minutes

So, the ratio of 15 minutes to 1 hour = $15:60 = 5:20$

Q 12. What is the ratio of 42 minutes to 2 hours?

1. 7:20
2. 14:15
3. 1:2
4. 3:5
5. 6:7

Answer: (1) 7:20

Solution:

1 hour = 60 minutes

2 hours = $60 \times 2 = 120$ minutes

Thus, the ratio of 42 minutes to 2 hours = $42:120 = 7:20$

Q 13. Vinit bought a new wall clock on Monday and set the correct time as 10 a.m. on it and fixed it on a wall. The same clock loses 15 minutes in 24 hours. What will be the true time if the clock indicates 4 a.m. on the following Sunday?

1. 6:00 a.m.
2. 5:02 a.m.
3. 4:44 a.m.
4. 5:12 a.m.
5. 6:43 a.m.

Answer: (4) 5:12 a.m.

Solution:

From the time the clock was set to the final time taken, the total hours = 114 (From Monday 10 a.m. to Sunday 4 a.m.)

If the clock is losing 15 minutes in one day, it means that the rest 23 hours and 245 minutes is correctly displayed.

Which means, $\frac{95}{4}$ hours of the incorrect time = 24 hours of the correct clock

So, $(24 \times \frac{4}{95}) \times 114 = 115 \frac{19}{95}$ hours or 115.2 hours

Therefore, 115 hours 12 minutes of the correct clock

So, the true time will be 5:12 a.m.

Q 14. What is the ratio of 3 hours to 54 minutes?

1. 5:2
2. 11:9
3. 2:1
4. 9:4
5. 10:3

Answer: (5) 10:3

Solution:

1 hour = 60 minutes

3 hours = $60 \times 3 = 180$ minutes

So, the ratio of 3 hours to 54 minutes = $180:54 = 10:3$

Q 15. In a wristwatch, at what time between 1 o'clock and 2 o'clock, will the minutes and hours hands of the watch make an angle of 180° ?

1. $35 \frac{2}{11}$ minutes past 1
2. $38 \frac{2}{11}$ minutes past 1
3. $39 \frac{2}{11}$ minutes past 1
4. $36 \frac{2}{11}$ minutes past 1

5. $37 \frac{2}{11}$ minutes past 1

Answer: (2) $38 \frac{2}{11}$ minutes past 1

Solution:

Let us assume that when the minute's hand is at 7, the hands are going to make an 180° angle

So, it can be said that it will contain 7 equal parts, with the degree of each part = 30°

So, the total angle = $30^\circ \times 7 = 210^\circ$

If $11/2^\circ$ is gained in a minute

Then, 210° gain will be = $\frac{2}{11} \times 210 = 420/11$

$\Rightarrow 38 \frac{2}{11}$ minutes past 1

Q 16. What shall be the ratio of 18 minutes to 9 hours?

1. 2:29
2. 1:30
3. 30:1
4. 29:2
5. 3:4

Answer: (2) 1:30

Solution:

1 hour = 60 minutes

9 hours = $60 \times 9 = 540$ minutes

So, the ratio of 18 minutes to 9 hours = $18:540 = 1:30$