



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

## MIRROR IMAGE

1) A clock when seen from the water, shows time given below. What is the real time in the clock?

i) 7:20

**Trick:** If it is 12hours clock Subtract from **11:60 = 12:00**

If it is 24hours clock Subtract from **23:60.**

11:60

07:20

04:40

ii) 6:40

11:60

06:40

05:20

iii) 4:00

11:60

04:00

07:60 or 8:00



# Selvam College of Technology



Accredited by NAAC with "A" Grade, UGC Recognized 2(f) Status,  
An ISO 9001:2015 Certified Institution, Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai

PONNUSAMY NAGAR, SALEM ROAD(NH-44), NAMAKKAL - 637003. TAMILNADU.  
Mobile: 9942099122, 9942099109, Web: www.selvamtech.edu.in

<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

iv) 8:45

11:60

08:45

03:15

v) 10:30

11:60

10:30

01:30

vi) 08:10

11:60

08:10

03:50

vii) 10:35

11:60

10:35

03:50

Viii) 12:23

(Exceeds 12 means write as 00)

11:60

00:35

03:50



# Selvam College of Technology



Accredited by NAAC with "A" Grade, UGC Recognized 2(f) Status,  
An ISO 9001:2015 Certified Institution, Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai

PONNUSAMY NAGAR, SALEM ROAD(NH-44), NAMAKKAL - 637003. TAMILNADU.  
Mobile: 9942099122, 9942099109, Web: www.selvamtech.edu.in

<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

ix) 11:21

11:60

11:21

00:39

x) 9hours 48 minutes

11:60

09:48

02:12

## WATER IMAGE

2) A clock, when seen from the water, shows time given below. What is the real time in the clock?

i)7:20

Trick: If it is 12 hours clock Subtract from **18:30 /17:90**

18:30

07:20

11:10

ii)6:40

18:30

06:40

11:50



# Selvam College of Technology



Accredited by NAAC with "A" Grade, UGC Recognized 2(f) Status,  
An ISO 9001:2015 Certified Institution, Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai

PONNUSAMY NAGAR, SALEM ROAD(NH-44), NAMAKKAL - 637003. TAMILNADU.  
Mobile: 9942099122, 9942099109, Web: www.selvamtech.edu.in

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

iii) 4:00

18:30

04:00

14:30 Subtract 12:00 so,02:30

iv) 8:45

17: 90

18:30

08:45

09:45

(60+30)-45

v) 10:30

18:30

10:30

08:00

vi) 08:10

18:30

08:10

15:20



# Selvam College of Technology



Accredited by NAAC with "A" Grade, UGC Recognized 2(f) Status,  
An ISO 9001:2015 Certified Institution, Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai

PONNUSAMY NAGAR, SALEM ROAD(NH-44), NAMAKKAL - 637003. TAMILNADU.  
Mobile: 9942099122, 9942099109, Web: www.selvamtech.edu.in

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

vii) 10:40

17: 90  
 -18:30  
 10:40

} (60+30)-40

07:50

Viii) 04:40

17: 90  
 -18:30  
 04:40

} (60+30)-40

13:50      Subtract 12:00 so,01:50

ix) 02:55

17: 90  
 -18:30  
 02:55

} (60+30)-55

15:35      Subtract 12:00 so,03:35

x) 9hours 48 minutes

17: 90  
 -18:30  
 09:48

} (60+30)-48

06:42



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

## ANGLE MADE BY MINUTE HAND AND HOUR HAND

3) What will be the angle between the two hands of the clock at 8:30pm?

- a)  $90^{\circ}$       b)  $75^{\circ}$       c)  $60^{\circ}$       d)  $85^{\circ}$

Ans: b)  $75^{\circ}$

Formula:  $\theta = 30(H) - 11/2(M)$

### Solution

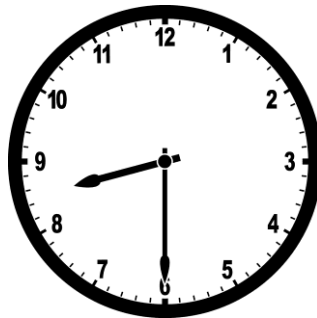
#### Method 1

$$= 30H - 11/2(M)$$

$$= 30(8) - 11/2(30)$$

$$= 240 - 165$$

$$= 75^{\circ}$$



#### Method 2

Step 1: No. of divisions between minute hand and hour hand  $\times 30$

Step 2: Minutes  $/ 2$

No of divisions between Minute and Hour hand  $= 2 \times 30 = 60$

Minutes  $/ 2 = 30 / 2 = 15$

Adding  $60 + 15 = 75^{\circ}$



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

4) What will be the angle between the two hands of the clock at 4:30pm?

- a)90°                      b)45°                      c)60°                      d)85°

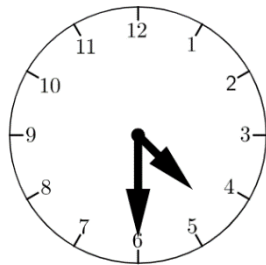
**Ans: b)45°**

Formula:  $\theta = 30(H) \sim 11/2(M)$

### Solution

#### Method 1

$$\begin{aligned} &= 30H \sim 11/2(M) \\ &= 30(4) \sim 11/2(30) \\ &= 120 \sim 165 \\ &= 45^\circ \end{aligned}$$



#### Method 2

**Step 1: No.of.divisions between minute hand and hour hand\*30**

**Step 2: Minutes /2**

No of divisions between Minute and Hour hand =  $2*30 = 60$

Minutes/2 =  $30/2 = 15$  (Hour hand is **behind** the minute hand)

Subtracting  $60 - 15 = 45^\circ$



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

5) What will be the angle between the two hands of the clock at 6:15pm?

- a)90°                      b)97.5°                      c)60°                      d)85°

Ans: b)97.5°

Formula:  $\theta = 30(H) \sim 11/2(M)$

### Solution

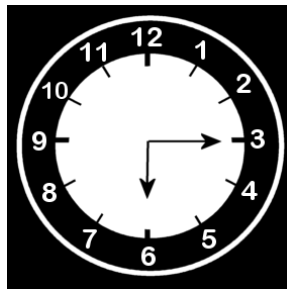
#### Method 1

$$= 30H \sim 11/2(M)$$

$$= 30(6) \sim 11/2(15)$$

$$= 180 \sim 82.5$$

$$= 97.5$$



#### Method 2

**Step 1: No.of.divisions between minute hand and hour hand\*30**

**Step 2: Minutes /2**

No of divisions between Minute and Hour hand =  $3 * 30 = 90$

Minutes/2 =  $15/2 = 7.5$  (Hour hand is ahead the minute hand)

Adding  $90 + 7.5 = 97.5^\circ$





Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

6) What will be the angle between the two hands of the clock at 8:40pm?

- a)90°                      b)20°                      c)60°                      d)85°

Ans: b)20°

Formula:  $\theta = 30(H) \sim 11/2(M)$

### Solution

#### Method 1

$$= 30H \sim 11/2(M)$$

$$= 30(8) \sim 11/2(40)$$

$$= 240 \sim 220$$

$$= 20^\circ$$



#### Method 2

**Step 1: No.of.divisions between minute hand and hour hand\*30**

**Step 2: Minutes /2**

No of divisions between Minute and Hour hand =  $0 * 30 = 0$

Minutes/2 =  $40/2 = 20$  (Hour hand is ahead the minute hand)

Adding  $0 + 20 = 20^\circ$



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

7) What will be the angle between the two hands of the clock at 5.00pm?  
a)  $90^\circ$                       b)  $150^\circ$                       c)  $160^\circ$                       d)  $85^\circ$

**Ans: b)  $150^\circ$**

**Formula:  $\theta = 30(H) \sim 11/2(M)$**

## Solution

### Method 1

$$= 30H \sim 11/2(M)$$

$$= 30(5) \sim 11/2(0)$$

$$= 150 \sim 0$$

$$= 150^\circ$$



### Method 2

**Step 1: No.of.divisions between minute hand and hour hand \* 30**

**Step 2: Minutes / 2**

No of divisions between Minute and Hour hand =  $5 * 30 = 150$

Minutes / 2 =  $0 / 2 = 0$  (Hour hand is ahead the minute hand)

Adding  $150 + 0 = 150^\circ$



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

8) What will be the angle between the two hands of the clock at 7.00pm?

- a)90°                      b)210°                      c)160°                      d)85°

**Ans: b)210°**

Formula:  $\theta = 30(H) \sim 11/2(M)$

### Solution

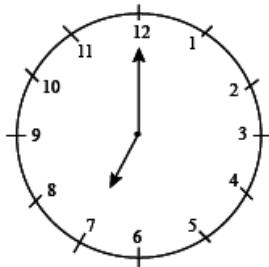
#### Method 1

$$= 30H \sim 11/2(M)$$

$$= 30(7) \sim 11/2(0)$$

$$= 210 \sim 0$$

$$= 210^\circ$$



#### Method 2

**Step 1: No.of.divisions between minute hand and hour hand\*30**

**Step 2: Minutes /2**

No of divisions between Minute and Hour hand =  $7 * 30^\circ = 210$

Minutes/2 =  $0/2 = 0$  (Hour hand is ahead the minute hand)

Adding  $210 + 0 = 210^\circ$



# Selvam College of Technology



Accredited by NAAC with "A" Grade, UGC Recognized 2(f) Status,  
 An ISO 9001:2015 Certified Institution, Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai  
 PONNUSAMY NAGAR, SALEM ROAD(NH-44), NAMAKKAL - 637003. TAMILNADU.  
 Mobile: 9942099122, 9942099109, Web: www.selvamtech.edu.in

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

9) What will be the angle between the two hands of the clock at 10:10pm?  
 a)115<sup>0</sup>                      b)120<sup>0</sup>                      c)160<sup>0</sup>                      d)185<sup>0</sup>

**Ans: a)115<sup>0</sup>**

Formula:  $\theta = 30(H) \sim 11/2(M)$

## Solution

### Method 1

$$= 30H \sim 11/2(M)$$

$$= 30(10) \sim 11/2(10)$$

$$= 300 \sim 55$$

$$= 245^0 (\text{Reflex angle})$$



If the value is Greater than 180, then Subtract from 360. (360-245=115<sup>0</sup>)

### Method 2

Step 1: No.of.divisions between minute hand and hour hand\*30

Step 2: Minutes /2

No of divisions between Minute and Hour hand =  $4 * 30^0 = 120$

Minutes/2 =  $10/2 = 5$  (Hour hand is behind the minute hand)

Subtracting  $120 - 5 = 115^0$



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

## HANDS -COINCIDE, OPPOSITE TO EACH OTHER, PERPENDICULAR.

10) At what time between 6 o'clock and 7 o'clock will be the hands of a clock coincide?

- a) 6:32      8/11 minutes
- b) 6:34      8/11 minutes
- c) 6:30      8/11 minutes
- d) 6:32      5/7 minutes

**Ans: a) 6:32      8/11 minutes**

The hands of the clock coincide at **6:30** between 6 o'clock and 7 o'clock.

Formula: $H: \frac{12}{11}(M)$	Smaller number
--------------------------------	----------------



6:  $\frac{12}{11}(30)$

6:  $\frac{360}{11}$

6:    32    8/11

**Trick to find the answer without using pen:**

Check the mixed fraction from the given options

**Example:** a) 6:32      8/11 minutes

**Add the values**      a) 6: **32 + 8/11** minutes ; Here **32+8=40** .

Check whether the **unit digit is zero**. & **minutes is a multiple of 5** 5/11

If the unit digit is zero, that is the answer. So option a is the answer.



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

11) At what time between 9o clock and 10o clock will be the hands of a clock be opposite to each other?

- a) 9:15 minutes
- b) 9:16 minutes
- c) 9:16      4/11 minutes
- d) 9:17      1/11 minutes

**Ans:c) 9:16      4/11 minutes**

The hands of the clock opposite to each other means @ straight line (180 degrees) at **9: 15** between 9o clock and 10o clock.



Formula: $H: 12/11(M)$	Smaller number
------------------------	----------------

9: 12/11(15)

9: 180/11

9: 16    4 /11

**Trick to find the answer without using pen:**

Check the mixed fraction from the given options

**Example:** c) 9:16      4/11 minutes

**Add the values** a) 9: 16 +4/11 minutes. Here 16+4=20.

Check whether the **unit digit is zero.** & **minutes is a multiple of 5** 5/11.

If the unit digit is zero, that is the answer. So option c is the answer.



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

12) At what time in minute between 3 o' clock and 4 o' clock, both needles will coincide each other?

- a) 5      1/11 minutes
- b) 12     4/11 minutes
- c) **16     4/11 minutes**
- d) 17     1/11 minutes

The hands of the clock opposite to each other means @ straight line (180 degrees) at **3: 15** between 3 o' clock and 4 o' clock.



Formula: $H: \frac{12}{11}(M)$	Smaller number
--------------------------------	----------------

But there is a slight deviation in the position of hour hand when the minute hand is exactly at 15 minutes.

- 3: **12/11**(15)
- 3: 180/11
- 3: 16    4 /11

<p><b>Trick to find the answer without using pen:</b>  Check the mixed fraction from the given options  <b>Example:</b> d) 16      4/11 minutes  <b>Add the values</b>    a) <b>16 +4/11</b> minutes. Here 16+4=20.  Check whether the <b>unit digit is zero.</b> &amp; <b>minutes is a multiple of 5</b> 5/11.  If the unit digit is zero, that is the answer. So, option d is the answer.</p>
---



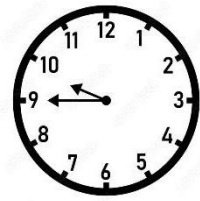
<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

13) At what time in a minute between 9 o' clock and 10 o' clock will the hands of the clock be together?

- a) 45 minutes
- b) 49 1/11 minutes
- c) 50 minutes
- d) 48 2/11 minutes

**Ans: c) 50 minutes**

The hands of the clock will be together means coincides at **9:45** between 9 o' clock and 10 o' clock.



Formula: $H: \frac{12}{11}(M)$	Smaller number
--------------------------------	----------------

But there is a slight deviation in the position of hour hand when the minute hand is exactly at 45minutes.

- 9: **12/11(45)**
- 9: 45\*12/11
- 9: 540 /11
- 9: **49 1/11**





Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

**Trick to find the answer without using pen:**

Check the mixed fraction from the given options

**Example:** b) 49       $1/11$  minutes

**Add the values**       $49 + 1/11$  minutes. Here  $49+1=50$ .

d) 48       $2/11$  minutes

$48 + 2/11$  minutes. Here  $48+2=50$ .

Check whether the **unit digit is zero or not**.

If the unit digit is zero, that is the answer. Here unit digit Trick **fails**.

Check whether **minutes is a multiple of 5**  $5/11$

The minute hand points 9; So,  $9 * (5 \frac{5}{11}) = 45 \frac{45}{11} = 49 \frac{1}{11}$ .

It satisfies both concepts such as unit digit 0 and minutes is a multiple of  $5 \frac{5}{11}$ .

So **option b)** is the correct answer.

14) At what time between 11 o'clock and 12 o'clock will be the hands of a clock be at angle  $180^\circ$ ?

a) 11:27  $3/11$  minutes

b) 11:30

c) 11:31  $3/11$  minutes

d) 11:25

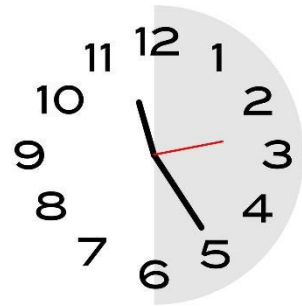
**Ans: a) 11:27  $3/11$  minutes**



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

The hands of the clock opposite to each other means @ straight line (180 degrees) at **11: 25** between 9o clock and 10o clock.

Formula: $H: 12/11(M)$	Smaller number
------------------------	----------------



But there is a slight deviation in the position of hour hand when the minute hand is exactly at 25 minutes

$$11: 12/11(25)$$

$$11: 300/11$$

$$11: 27 \quad 3/11$$

**Trick to find the answer without using pen:**

Check the mixed fraction from the given options

**Example:** a) 11:27       $3/11$  minutes

**Add the values**    a) 11:  $27+3/11$  minutes. Here  $27+3=30$ .

Check whether the **unit digit is zero.** & minutes is a multiple of 5  $5/11$ .

If the unit digit is zero, that is the answer. So option a is the answer.



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

15) At what time between 3 o'clock and 4 o'clock will be the hands of a clock be in the straight line?

- a) 3:49 1/11 minutes
- b) 3:30
- c) 3:33 7/11 minutes
- d) 3:45

**Ans: a) 3:49 1/11 minutes**

The hands of the clock opposite to each other means @ straight line (180 degrees) at **3: 45** between 9 o'clock and 10 o'clock.



Formula: $H: \frac{12}{11}(M)$	Smaller number
--------------------------------	----------------

But there is a slight deviation in the position of hour hand when the minute hand is exactly at 45 minutes

- 3: 12/11(45)
- 3: 45\*12/11
- 3: 540/11
- 3: 49 1/11



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

**Trick to find the answer without using pen:**

Check the mixed fraction from the given options

**Example:** b) 3: 49       $1/11$  minutes

**Add the values**     $49 + 1/11$  minutes. Here  $49+1=50$ .

c) 33       $7/11$  minutes

**$33 + 7/11$  minutes. Here  $33+7=50$ .**

Check whether the **unit digit is zero**. & minutes is a multiple of  $5 \frac{5}{11}$ .

Check whether minutes is a multiple of  $5 \frac{5}{11}$

The minute hand points 9; So,  $9 * (5 \frac{5}{11}) = 45 \frac{45}{11} = 49 \frac{1}{11}$ .

It satisfies both concepts such as unit digit 0 and minutes is a multiple of  $5 \frac{5}{11}$ .

**So option b) is the correct answer**



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

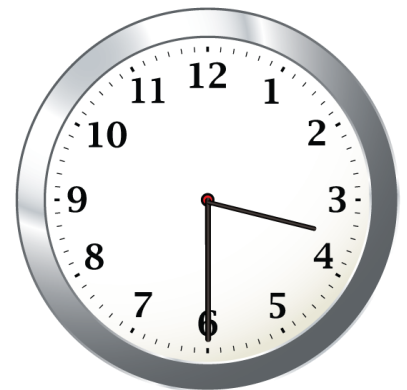
## PERPENDICULAR TO EACH OTHER.

16)At what time between 3 o' clock and 4 o' clock will the hands of the clock be at 90°?

- a) 3: 45 minutes
- b) 3: 32      8/11 minutes
- c) 3:30      minutes
- d) 3:15

**Ans: a) 3: 45 minutes**

The hands of the clock will be 90 degrees at **3:30** between 3 o' clock and 4 o' clock .



Formula: $H: \frac{12}{11}(M)$	Smaller number
--------------------------------	----------------

But there is a slight deviation in the position of hour hand when the minute hand is exactly at 30 minutes.

- 3: **12/11(30)**
- 3: 30\*12/11
- 3: 360 /11
- 3: **32 8/11**



# Selvam College of Technology



Accredited by NAAC with "A" Grade, UGC Recognized 2(f) Status,  
An ISO 9001:2015 Certified Institution, Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai  
PONNUSAMY NAGAR, SALEM ROAD(NH-44), NAMAKKAL - 637003. TAMILNADU.  
Mobile: 9942099122, 9942099109, Web: www.selvamtech.edu.in

<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

**Trick to find the answer without using pen:**

Check the mixed fraction from the given options

**Example:** a) 3:32      8/11 minutes

**Add the values**    a) 3: 32+8/11 minutes. Here 32+8=40.

Check whether the **unit digit is zero.** & minutes is a multiple of 5 5/11.

So option **a)** is the answer.



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

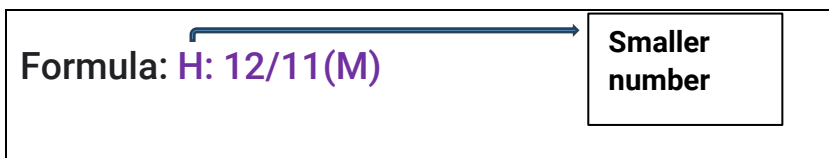
17) At what time between 5:30 and 6 o' clock will the hands of the clock be at 90°?

- a) 5: 45 minutes
- b) 5: 42      8/11 minutes
- c) 5:35      minutes
- d) 5: 43      7/11

**Ans: d) 5: 43      7/11**

The hands of the clock will be 90 degrees at **5:40** between 5:30 and 6 o' clock.

But there is a slight deviation in the position of hour hand when the minute hand is exactly at 40 minutes.



5: **12/11**(40)

5: 40 \*12/11

5: 480 /11

5: **43 7/11**



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

## Method 2

Formula:  $\theta = 30(H) - 11/2(M)$

Here hour hand is behind minute hand. So  $\theta = -90$

$$-90 = 30H - 11/2(M)$$

$$-90 = 30(5) - 11/2M$$

$$-90 - 150 = -11/2M$$

$$-240 = -11/2M$$

$$M = (240 \times 2) / 11$$

$$480 / 11 \quad M = 43 \quad 7/11$$





Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

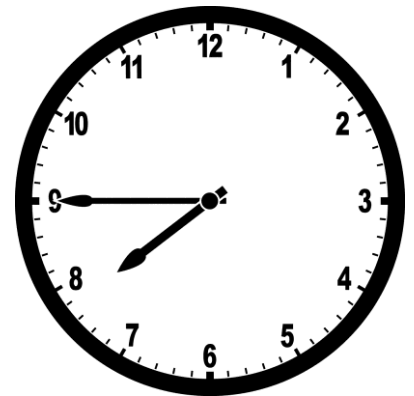
## MISCELLANEOUS

18) At what time between 7 o' clock and 8 o' clock will the hands of the clock be at  $45^\circ$ ?

- a) 7: 45 minutes
- b) 7: 46      4/11 minutes
- c) 7:30 minutes
- d) 7:15

**Ans: c) 7:30 minutes**

The hands of the clock will be 45 degrees at **7:30** between 7o' clock and 8 o' clock.



Formula:  $H = \frac{2}{11}(A_1 + A_2)$  or  $\frac{2}{11}(A_1 - A_2)$

H: smaller number

$A_1 =$  Smaller number  $\times 30$

$A_2 = \frac{2}{11}(A_1 + \theta)$  or  $\frac{2}{11}(A_1 - \theta)$

But there is a slight deviation in the position of hour hand when the minute hand is exactly at 45 minutes.



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

Solving by formula Hour hand is behind Minute hand So  $\theta = -45$

$$A_1 = 7 \times 30 = 210$$

$$A_2 = \frac{2}{11}(210 + 45)$$

$$= \frac{(255 \times 2)}{11}$$

$$= \frac{510}{11}$$

$$= 46 \frac{4}{11}. \quad \text{It is greater than } 45^\circ.$$

Try it with  $A_2 = \frac{2}{11}(A_1 - \theta)$

$$A_1 = 7 \times 30 = 210$$

$$A_2 = \frac{2}{11}(210 - 45)$$

$$= \frac{(165 \times 2)}{11}$$

$$= \frac{330}{11}$$

$$= 30$$

Then the answer is **7:30**



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

19)When in between 3 o' clock and 4 o' clock the minute hand is behind & ahead by 4 minutes from the hour hand of the clock?

- a) 3: 24 minutes, 3: 20 8 /11 minutes
- b) 3: 20 3 /11 minutes,3:15
- c) 3:14 minutes
- d) 3:12, 3: 20 8 /11 minutes

**Ans: d) 3:12, 3: 20 8 /11 minutes**

MINUTE HAND	HOUR HAND
$60 \text{ min} = 360^\circ$ $1 \text{ min} = 360/60 = 6^\circ$ <b>Minute Hand = <math>6^\circ/\text{Minute}</math></b>	$12 \text{ hours} = 360^\circ$ $1 \text{ hour} = 360/12 = 30^\circ$ $60 \text{ min} = 30^\circ$ $1 \text{ min} = 30/60 = 1/2^\circ$ <b>Hour Hand = <math>(1/2^\circ)/\text{Minute}</math></b>
<b>Formula: H: <math>2/11(A_1 + A_2)</math> or <math>2/11(A_1 - A_2)</math></b> <b>H: smaller number</b> <b><math>A_1 = \text{Smaller number} * 30</math></b> <b><math>A_2 = 2/11 (A_1 + \theta)</math> or <math>2/11 (A_1 - \theta)</math></b>	



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

$$1 \text{ min} = 6^0$$

$$\text{So } 4 \text{ mins} = 24^0$$

Hour hand is behind Minute hand So  $\theta = -24$

Minute hand is ahead hour hand So  $\theta = -24$  (given in question)

$$A_1 = 3 \times 30$$

$$A_2 = \frac{2}{11} (A_1 - \theta)$$

$$A_2 = \frac{2}{11} (90 - 24)$$

$$= \frac{(66 \times 2)}{11}$$

$$= \frac{132}{11}$$

$$= 12 \text{ minutes}$$

The answer is **3:12**

$$4 \text{ min} = 24^0$$

Hour hand is ahead Minute hand So  $\theta = +24$

Minute hand is behind hour hand So  $\theta = +24$  (given in question)

$$A_1 = 3 \times 30$$

$$A_2 = \frac{2}{11} (A_1 + \theta)$$

$$A_2 = \frac{2}{11} (90 + 24)$$

$$= \frac{(114) \times 2}{11}$$

$$= \frac{(10 \frac{4}{11}) \times 2}{11}$$

$$= 20 \frac{8}{11} \text{ minutes}$$

The answer is **3: 20 8/11 minutes**



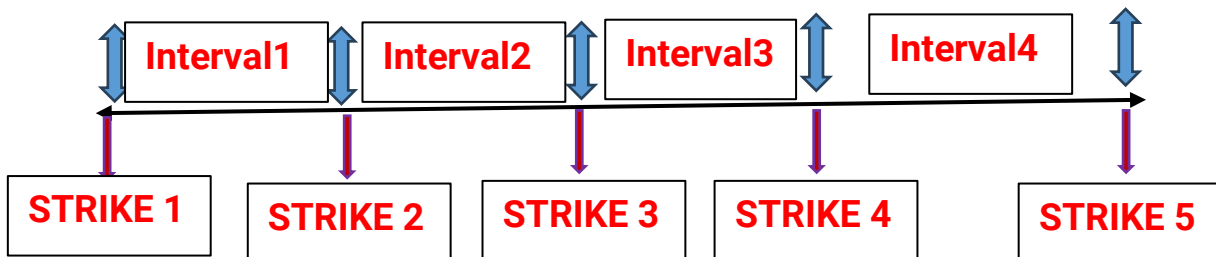
Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	CLOCK	Last updated on	23January 2024

## STRIKING CLOCK

20) A clock takes 8 seconds to strike 5 times. Then how many seconds does it take to make 10 strikes?

- a) 10 seconds
- b) 18 seconds
- c) 11 seconds
- d) 16 seconds

Ans: b) 18 seconds



5 Strikes = 4 equal intervals.

4 equal intervals = 8 seconds.

1 interval = 2 seconds.

For 10 strikes = 9 equal intervals.

9 equal intervals =  $9 \times 2 = 18$  seconds



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

21)A clock takes 33 seconds to make 12 strikes. Then how many seconds does it take to strike 6 times?

- a) 33/2 seconds
- b) 15 seconds
- c) 12 seconds
- d) 22 seconds

**Ans: b) 15 seconds**

12 Strikes = 11 equal intervals.

11 equal intervals= 33 seconds.

1 interval=3 seconds.

For 6 strikes = 5 equal intervals.

5 equal intervals= $5 \times 3 = 15$  seconds.



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

## FAULTY CLOCK

22) A clock which moves continuously fast. It lags 5 minutes on Sunday 8 am, it is ahead 7 minutes on Tuesday 8 am then finds when the clock shows the right time?

- A) 4 am. Monday                      B) 10 am. Monday  
C) 10 pm. Sunday                      D) 10 pm. Tuesday

**ANS: A)4 am. Monday.**

## SOLUTION

### Formula

$$\frac{\text{slow or fast}}{\text{slow+fast}} \times \text{Total time Hr/days}$$

Sunday 8 AM 5 minutes lag }  
Monday } **48 HOURS (Total time)**  
Tuesday 8 AM 7 minutes lead }

$$= \frac{5}{5+7} \times 48$$

$$= 5 \times 4 = 20$$

Sunday 8 AM +20Hr  
=Monday 4 AM



<b>Name of the Bundle</b>	PROFICIENT BUNDLE V2	<b>Subject</b>	APTITUDE
<b>Topic</b>	CLOCK	<b>Last updated on</b>	23January 2024

### Time gained or lost by the clock

23) A clock gains 15 minutes per day. It is set right at 12 noon. What time will it show at 4.00 am, the next day?

- A) 4:10 am                      B) 4:45am
- C) 4:20 am                      D) 5:00am

**ANS: a) 4:10 am**

### SOLUTION

For 24 hrs it gains 15 mins,

From 12noon to 12 am=====>12hrs

From 12am to 4am =====>4hrs



Hours	Minutes gained
24	15
16	10

So it will show 4:10AM next day.