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| **Clocks** |
| (1) A clock has two hands, smaller hand is called short hand or hour hand. While larger hand is called long hand or minute hand.   (2) Both hands of clock coincides in one hour   (3) In each 60 minutes, the minute hand gains 55 minutes on the hour hand  (4) When both the hands are at right angle, they are 15 minutes space apart   (5) Both hands are in straght line when they are opposite to each other or coincident to each other.  (6) Angle traced by hour hand in 12 hours = 360°  (7) Angle traced by minute hand in 60 minutes are 360 °  (8) When both hour and minute hands are at right angle they are 15 minute apace apart  ***Ex.****find the angle between the hour hand and the minute hand of a clock when the time 2.45* ***Solution :****Angle traced by the hour hand in 12 hour = 360 °  Clocks   Angle traced by minute hand in 60 min = 360°  Clocks  hour*  **Ex.** Find at what time between 9 and 10 o'clock will the hands of a clock be in the same straight line but not together ?  **Solution :** At 9 o'clock hour hand 15 min space apart from minute hand.  Also minute hand has gain of (30-15)= 15 min spaces apart over hour hand  For both hand to be straight but not together they will be 30 min space apart.  55 min space gained by min hand in 60 min   Clocks  **Ex.** At what time between 8 and 9 o'clock will the hands of a clock be at right angle ?  **Solution :** At 8 o'clock min hands are 20 min space ahead the hour hand.  Also when both hands are at right angled, they are 15 mins space apart.  **Case 1:** when min hand 15 min space ahead the hour hand   In this case min hand has a gain of (20-15)= 5 min  now 55 min space is gained in 60 min  Clocks  Problems ased on clocks  **Case 2:** When min hand 15 space behind the hour hand  In this case min. hand has a gain of (20+15) = 35 min  now 55 min space is gained in 60 min  Problems on Clocks  Problems based on Clocks  **Ex.** A clock is set right at 8 a.m. The clock loses 1 minutes in 24 hours. What will be true time when clock indicates 8 p.m on the third day ?  **Solution :** Time from 8 a.m. on first day to 8 p.m of third day = 60 hrs  also 23 hrs and 45 min = 95 / 4 hrs  95/4 hrs of this clock = 24 hrs of correct clock  Problem on clocks  = 61 hrs of correct clock, So, the correct time will be 9 p.m  ***Ex.****At what angle the hands of a clock are inclined at 15 minutes past 4 ?* ***Solution :****15 minutes past 4= 4 + 15 / 60 = 17 / 4 hrs  Angle traced by hour hand in 12 hours = 360°  Problem based on clocks  Problems on clocks  Problems on clocks*  **Some Important points :**  **(1)** Clock hands coincide 11 times in every 12 hours, as they coincides only one time between 11 and 1, at 12 o'clock.  **(2)** So, Both hands coincides 22 times in 24 hours or in a day.  **(3)** In 12 hours both hands are in straight line ( eighter coincides or in opposite direction ) 22 times.   **(4)** So, In 24 hours both hands are in straight line ( eighter coincides or in opposite direction ) 44 times.  **(5)** In 12 hours both hands are at right angled 22 times and 44 times in a day  **(6)** In 12 hours both hands are in opposite direction 11 times, between 5 to 7 , they are opposite at 6 o'clock only. So in a day 22 times in opposite directions. |
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| 1. | An accurate clock shows 8 o'clock in the morning. Through how may degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon? |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 144º | [**B.**](javascript:%20void%200;) | 150º | | [**C.**](javascript:%20void%200;) | 168º | [**D.**](javascript:%20void%200;) | 180º |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **D**  **Explanation:**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Angle traced by the hour hand in 6 hours = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 360 | x 6 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | º | = 180º. | | 12 |   [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-641) |

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| 2. | The reflex angle between the hands of a clock at 10.25 is: |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 180º | [**B.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 192 | 1 | º | | 2 | | | [**C.**](javascript:%20void%200;) | 195º | [**D.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 197 | 1 | º | | 2 | |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **D**  **Explanation:**   |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Angle traced by hour hand in | 125 | hrs = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 360 | x | 125 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | º | = 312 | 1 | º | . | | 12 | 12 | 12 | 2 |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Angle traced by minute hand in 25 min = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 360 | x 25 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | º | = 150º. | | 60 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Reflex angle = 360º - | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 312 | 1 | - 150 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | º | = 360º - 162 | 1 | º | = 197 | 1 | . | | 2 | 2 | 2 |   [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-646) |

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| 3. | A clock is started at noon. By 10 minutes past 5, the hour hand has turned through: |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 145º | [**B.**](javascript:%20void%200;) | 150º | | [**C.**](javascript:%20void%200;) | 155º | [**D.**](javascript:%20void%200;) | 160º |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **C**  **Explanation:**  Angle traced by hour hand in 12 hrs = 360º.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Angle traced by hour hand in 5 hrs 10 min. *i.e.,* | 31 | hrs = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 360 | x | 31 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | º | = 155º. | | 6 | 12 | 6 |   [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-640) |

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| 4. | A watch which gains 5 seconds in 3 minutes was set right at 7 a.m. In the afternoon of the same day, when the watch indicated quarter past 4 o'clock, the true time is: |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 59 | 7 | min. past 3 | | 12 | | [**B.**](javascript:%20void%200;) | 4 p.m. | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 58 | 7 | min. past 3 | | 11 | | [**D.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 2 | 3 | min. past 4 | | 11 | |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **B**  **Explanation:**   |  |  |  | | --- | --- | --- | | Time from 7 a.m. to 4.15 p.m. = 9 hrs 15 min. = | 37 | hrs. | | 4 |   3 min. 5 sec. of this clock = 3 min. of the correct clock.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif | 37 | hrs of this clock = | 1 | hrs of the correct clock. | | 720 | 20 |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif | 37 | hrs of this clock = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 | x | 720 | x | 37 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | hrs of the correct clock. | | 4 | 20 | 37 | 4 |         = 9 hrs of the correct clock.  http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif The correct time is 9 hrs after 7 a.m. *i.e.,* 4 p.m.  [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-658) |

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| 5. | How much does a watch lose per day, if its hands coincide every 64 minutes? |
| |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 32 | 8 | min. | | 11 | | [**B.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 36 | 5 | min. | | 11 | | | [**C.**](javascript:%20void%200;) | 90 min. | [**D.**](javascript:%20void%200;) | 96 min. |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **A**  **Explanation:**  55 min. spaces are covered in 60 min.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 60 min. spaces are covered in | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 60 | x 60 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin. | = 65 | 5 | min. | | 55 | 11 |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Loss in 64 min. = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 65 | 5 | - 64 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = | 16 | min. | | 11 | 11 |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Loss in 24 hrs = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 16 | x | 1 | x 24 x 60 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin. | = | 32 | 8 | min. | | 11 | 64 | 11 | |
| 6. | *At what time between 7 and 8 o'clock will the hands of a clock be in the same straight line but, not together?* |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | [***A.***](javascript:%20void%200;) | *5 min. past 7* | [***B.***](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | *5* | *2* | *min. past 7* | | *11* | | | [***C.***](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | *5* | *3* | *min. past 7* | | *11* | | [***D.***](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | *5* | *5* | *min. past 7* | | *11* | |   [***Answer & Explanation***](javascript:%20void%200;)  ***Answer:****Option****D***  ***Explanation:***  *When the hands of the clock are in the same straight line but not together, they are 30 minute spaces apart.*  *At 7 o'clock, they are 25 min. spaces apart.*  *http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Minute hand will have to gain only 5 min. spaces.*  *55 min. spaces are gained in 60 min.*   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | *5 min. spaces are gained in* | *http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif* | *60* | *x 5* | *http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin* | *= 5* | *5* | *min.* | | *55* | *11* |  |  |  |  | | --- | --- | --- | | *http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required time = 5* | *5* | *min. past 7.* | | *11* |   [*View Answer*](javascript:%20void%200;)[*Workspace*](javascript:%20void%200;)[*Report*](javascript:%20void%200;)[*Discuss in Forum*](http://www.indiabix.com/aptitude/clock/discussion-654) |

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| 7. | At what time between 5.30 and 6 will the hands of a clock be at right angles? |
| |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 43 | 5 | min. past 5 | | 11 | | [**B.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 43 | 7 | min. past 5 | | 11 | | | [**C.**](javascript:%20void%200;) | 40 min. past 5 | [**D.**](javascript:%20void%200;) | 45 min. past 5 |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **B**  **Explanation:**  At 5 o'clock, the hands are 25 min. spaces apart.  To be at right angles and that too between 5.30 and 6, the minute hand has to gain (25 + 15) = 40 min. spaces.  55 min. spaces are gained in 60 min.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 40 min. spaces are gained in | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 60 | x 40 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin | = | 43 | 7 | min. | | 55 | 11 |  |  |  |  | | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required time = 43 | 7 | min. past 5. | | 11 |   [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-656) |

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| 8. | *T*  *he angle between the minute hand and the hour hand of a clock when the time is 4.20, is:* |
| |  |  |  |  | | --- | --- | --- | --- | | [***A.***](javascript:%20void%200;) | *0º* | [***B.***](javascript:%20void%200;) | *10º* | | [***C.***](javascript:%20void%200;) | *5º* | [***D.***](javascript:%20void%200;) | *20º* |   [***Answer & Explanation***](javascript:%20void%200;)  ***Answer:****Option****B***  ***Explanation:***   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | *Angle traced by hour hand in* | *13* | *hrs =* | *http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif* | *360* | *x* | *13* | *http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif* | *º* | *= 130º.* | | *3* | *12* | *3* |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | *Angle traced by min. hand in 20 min. =* | *http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif* | *360* | *x 20* | *http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif* | *º* | *= 120º.* | | *60* |   *http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required angle = (130 - 120)º = 10º.*  [*View Answer*](javascript:%20void%200;)[*Workspace*](javascript:%20void%200;)[*Report*](javascript:%20void%200;)[*Discuss in Forum*](http://www.indiabix.com/aptitude/clock/discussion-644) |

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| 9. | ***At what angle the hands of a clock are inclined at 15 minutes past 5?*** |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | [***A.***](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | ***58*** | ***1*** | ***º*** | | ***2*** | | [***B.***](javascript:%20void%200;) | ***64º*** | | [***C.***](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | ***67*** | ***1*** | ***º*** | | ***2*** | | [***D.***](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | ***72*** | ***1*** | ***º*** | | ***2*** | |   [***Answer & Explanation***](javascript:%20void%200;)  ***Answer: Option C***  ***Explanation:***   |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ***Angle traced by hour hand in*** | ***21*** | ***hrs =*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif*** | ***360*** | ***x*** | ***21*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif*** | ***º*** | ***=*** | ***157*** | ***1*** | ***º*** | | ***4*** | ***12*** | ***4*** | ***2*** |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | ***Angle traced by min. hand in 15 min. =*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif*** | ***360*** | ***x 15*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif*** | ***º*** | ***= 90º.*** | | ***60*** |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ***http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required angle =*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif*** | ***157*** | ***1*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif*** | ***º*** | ***- 90º = 67*** | ***1*** | ***º*** | | ***2*** | ***2*** |   [***View Answer***](javascript:%20void%200;)[***Workspace***](javascript:%20void%200;)[***Report***](javascript:%20void%200;)[***Discuss in Forum***](http://www.indiabix.com/aptitude/clock/discussion-645) |

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| 10. | ***At 3.40, the hour hand and the minute hand of a clock form an angle of:*** |
| |  |  |  |  | | --- | --- | --- | --- | | [***A.***](javascript:%20void%200;) | ***120º*** | [***B.***](javascript:%20void%200;) | ***125º*** | | [***C.***](javascript:%20void%200;) | ***130º*** | [***D.***](javascript:%20void%200;) | ***135º*** |   [***Answer & Explanation***](javascript:%20void%200;)  ***Answer: Option C***  ***Explanation:***  ***Angle traced by hour hand in 12 hrs. = 360º.***   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ***Angle traced by it in*** | ***11*** | ***hrs =*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif*** | ***360*** | ***x*** | ***11*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif*** | ***º*** | ***= 110º.*** | | ***3*** | ***12*** | ***3*** |   ***Angle traced by minute hand in 60 min. = 360º.***   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | ***Angle traced by it in 40 min. =*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif*** | ***360*** | ***x 40*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif*** | ***º*** | ***= 240º.*** | | ***60*** |   ***http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required angle (240 - 110)º = 130º.*** |
| *11.* | *How many times are the hands of a clock at right angle in a day?* |
| |  |  |  |  | | --- | --- | --- | --- | | [***A.***](javascript:%20void%200;) | *22* | [***B.***](javascript:%20void%200;) | *24* | | [***C.***](javascript:%20void%200;) | *44* | [***D.***](javascript:%20void%200;) | *48* |   [***Answer & Explanation***](javascript:%20void%200;)  ***Answer:****Option****C***  ***Explanation:***  *In 12 hours, they are at right angles 22 times.*  *http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif In 24 hours, they are at right angles 44 times.*  [*View Answer*](javascript:%20void%200;)[*Workspace*](javascript:%20void%200;)[*Report*](javascript:%20void%200;)[*Discuss in Forum*](http://www.indiabix.com/aptitude/clock/discussion-649) |

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| 12. | ***The angle between the minute hand and the hour hand of a clock when the time is 8.30, is:*** |
| |  |  |  |  | | --- | --- | --- | --- | | [***A.***](javascript:%20void%200;) | ***80º*** | [***B.***](javascript:%20void%200;) | ***75º*** | | [***C.***](javascript:%20void%200;) | ***60º*** | [***D.***](javascript:%20void%200;) | ***105º*** |   [***Answer & Explanation***](javascript:%20void%200;)  ***Answer: Option B***  ***Explanation:***   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ***Angle traced by hour hand in*** | ***17*** | ***hrs =*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif*** | ***360*** | ***x*** | ***17*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif*** | ***º*** | ***= 255.*** | | ***2*** | ***12*** | ***2*** |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | ***Angle traced by min. hand in 30 min. =*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif*** | ***360*** | ***x 30*** | ***http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif*** | ***º*** | ***= 180.*** | | ***60*** |   ***http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required angle = (255 - 180)º = 75º.***  [***View Answer***](javascript:%20void%200;)[***Workspace***](javascript:%20void%200;)[***Report***](javascript:%20void%200;)[***Discuss in Forum***](http://www.indiabix.com/aptitude/clock/discussion-643) |

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| 13. | ***How many times in a day, are the hands of a clock in straight line but opposite in direction?*** |
| |  |  |  |  | | --- | --- | --- | --- | | [***A.***](javascript:%20void%200;) | ***20*** | [***B.***](javascript:%20void%200;) | ***22*** | | [***C.***](javascript:%20void%200;) | ***24*** | [***D.***](javascript:%20void%200;) | ***48*** |   [***Answer & Explanation***](javascript:%20void%200;)  ***Answer: Option B***  ***Explanation:***  ***The hands of a clock point in opposite directions (in the same straight line) 11 times in every 12 hours. (Because between 5 and 7 they point in opposite directions at 6 o'clcok only).***  ***So, in a day, the hands point in the opposite directions 22 times.***  [***View Answer***](javascript:%20void%200;)[***Workspace***](javascript:%20void%200;)[***Report***](javascript:%20void%200;)[***Discuss in Forum***](http://www.indiabix.com/aptitude/clock/discussion-650) |

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| 14. | At what time between 4 and 5 o'clock will the hands of a watch point in opposite directions? |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 45 min. past 4 | [**B.**](javascript:%20void%200;) | 40 min. past 4 | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 50 | 4 | min. past 4 | | 11 | | [**D.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 54 | 6 | min. past 4 | | 11 | |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **D**  **Explanation:**  At 4 o'clock, the hands of the watch are 20 min. spaces apart.  To be in opposite directions, they must be 30 min. spaces apart.  http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Minute hand will have to gain 50 min. spaces.  55 min. spaces are gained in 60 min.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 50 min. spaces are gained in | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 60 | x 50 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin. or 54 | 6 | min. | | 55 | 11 |  |  |  |  | | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required time = 54 | 6 | min. past 4. | | 11 |   [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-655) |

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| 15. | At what time between 9 and 10 o'clock will the hands of a watch be together? |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 45 min. past 9 | [**B.**](javascript:%20void%200;) | 50 min. past 9 | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 49 | 1 | min. past 9 | | 11 | | [**D.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 48 | 2 | min. past 9 | | 11 | |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **C**  **Explanation:**  To be together between 9 and 10 o'clock, the minute hand has to gain 45 min. spaces.  55 min. spaces gained in 60 min.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 45 min. spaces are gained in | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 60 | x 45 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin or 49 | 1 | min. | | 55 | 11 |  |  |  |  | | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif The hands are together at 49 | 1 | min. past 9.  kghgh | |  | |
| 16. | At what time, in minutes, between 3 o'clock and 4 o'clock, both the needles will coincide each other? |
| |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 5 | 1 | *"* | | 11 | | [**B.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 12 | 4 | *"* | | 11 | | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 13 | 4 | *"* | | 11 | | [**D.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 16 | 4 | *"* | | 11 | |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **D**  **Explanation:**  At 3 o'clock, the minute hand is 15 min. spaces apart from the hour hand.  To be coincident, it must gain 15 min. spaces.  55 min. are gained in 60 min.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 15 min. are gained in | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 60 | x 15 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin | = | 16 | 4 | min. | | 55 | 11 |  |  |  |  | | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif The hands are coincident at 16 | 4 | min. past 3. | | 11 |   [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-652) |

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| 17. | How many times do the hands of a clock coincide in a day? |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 20 | [**B.**](javascript:%20void%200;) | 21 | | [**C.**](javascript:%20void%200;) | 22 | [**D.**](javascript:%20void%200;) | 24 |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **C**  **Explanation:**  The hands of a clock coincide 11 times in every 12 hours (Since between 11 and 1, they coincide only once, *i.e.,* at 12 o'clock).  **AM**  12:00 1:05 2:11 3:16 4:22 5:27 6:33 7:38 8:44 9:49 10:55  **PM**  12:00 1:05 2:11 3:16 4:22 5:27 6:33 7:38 8:44 9:49 10:55  The hands overlap about every 65 minutes, not every 60 minutes.  http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif The hands coincide 22 times in a day.  [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-647) |

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| 18. | How many times in a day, the hands of a clock are straight? |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 22 | [**B.**](javascript:%20void%200;) | 24 | | [**C.**](javascript:%20void%200;) | 44 | [**D.**](javascript:%20void%200;) | 48 |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **C**  **Explanation:**  In 12 hours, the hands coincide or are in opposite direction 22 times.  http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif In 24 hours, the hands coincide or are in opposite direction 44 times a day.  [View Answer](javascript:%20void%200;) [Workspace](javascript:%20void%200;) [Report](javascript:%20void%200;) [Discuss in Forum](http://www.indiabix.com/aptitude/clock/discussion-648) |

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| 19. | A watch which gains uniformly is 2 minutes low at noon on Monday and is 4 min. 48 sec fast at 2 p.m. on the following Monday. When was it correct? |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 2 p.m. on Tuesday | [**B.**](javascript:%20void%200;) | 2 p.m. on Wednesday | | [**C.**](javascript:%20void%200;) | 3 p.m. on Thursday | [**D.**](javascript:%20void%200;) | 1 p.m. on Friday |   [**Answer & Explanation**](javascript:%20void%200;)  **Answer:** Option **B**  **Explanation:**  Time from 12 p.m. on Monday to 2 p.m. on the following Monday = 7 days 2 hours = 170 hours.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif The watch gains | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 2 + 4 | 4 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifmin. | or | 34 | min. in 170 hrs. | | 5 | 5 |  |  |  |  | | --- | --- | --- | | Now, | 34 | min. are gained in 170 hrs. | | 5 |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif 2 min. are gained in | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 170 x | 5 | x 2 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifhrs | = 50 hrs. | | 34 |   http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Watch is correct 2 days 2 hrs. after 12 p.m. on Monday *i.e.,* it will be correct at 2 p.m. on Wednesday. |