

#### **GENERAL MENTAL ABILITY**





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## **Clocks and Calendar**

1. Odd Days:

We are supposed to find the day of the week on a given date. For this, we use the concept of 'odd days'.

In a given period, the number of days more than the complete weeks are called odd days.

2. Leap Year:

(i). Every year divisible by 4 is a leap year, if it is not a century.
(ii). Every 4<sup>th</sup> century is a leap year and no other century is a leap year.

Note: A leap year has 366 days.

Examples:

- i. Each of the years 1948, 2004, 1676 etc. is a leap year.
- ii. Each of the years 400, 800, 1200, 1600, 2000 etc. is a leap year.
- iii. None of the years 2001, 2002, 2003, 2005, 1800, 2100 is a leap year.
- 3. Ordinary Year:

The year which is not a leap year is called an ordinary years. An ordinary year has 365 days.

#### 4. Counting of Odd Days:

1.	1 ordinary year = 365 days = (52 weeks + 1 day.)
	1 ordinary year has 1 odd day.

- 1 leap year = 366 days = (52 weeks + 2 days)1 leap year has 2 odd days.
- 3. 100 years = 76 ordinary years + 24 leap years
  - $= (76 \times 1 + 24 \times 2) \text{ odd days} = 124 \text{ odd days}.$ 
    - = (17 weeks + days) = 5 odd days.

Number of odd days in 100 years = 5.

Number of odd days in 200 years =  $(5 \times 2) = 3$  odd days. Number of odd days in 300 years =  $(5 \times 3) = 1$  odd day.

Number of odd days in 400 years =  $(5 \times 4 + 1) \equiv 0$  odd day.

Similarly, each one of 800 years, 1200 years, 1600 years, 2000 years etc. has 0 odd days.

Day of the Week Related to Odd Days:



#### **GENERAL MENTAL ABILITY**

No. of days:	0	1	2	3	4	5	6
Day:	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.

The months January, March, May, July, August, October, December are of 31 days each remaining months are of 3. Days each, except February In a Leap year February is of 29 days, In ordinary year it is of 28 days. A calendar year begins with January and ends with December The first day of a week is considered as Sunday if not said otherwise After each 7 days the same day occurs for example if 11<sup>th</sup> of August if Sunday then 18 of August is also Sunday.

1. It was Sunday on Jan 1, 2006. What was the day of the week Jan 1, 2010?

<u>A.</u>	Sunday	<u>B.</u>	Saturday				
<u>C.</u>	Friday	<u>D.</u>	Wednesday				
Answer: Option C							
Expl	anation:	1					
On 3	Ist December, 2005 it was Satur	ay.	the year $2000 = (1 \pm 1 \pm 2)$				
= 5 d	avs.	00 ii	1112  year  2009 = (1 + 1 + 2)				
·· 0	n 31 <sup>st</sup> December 2009, it was Th	nursd	ay.				
Thus	, on 1 <sup>st</sup> Jan, 2010 it is Friday.		100				
<b>W</b> 71 4	and the day of the supple on Opt	h 1/	00062				
what	t was the day of the week on 28		, 2006?				
<u>A.</u>	Thursday	<u>B.</u>	Friday				
<u>C.</u>	Saturday	<u>D.</u>	Sunday				
Answ	ver: Option D						
Expl	anation:	6					
28 M	ay, 2006 = (2005  years + Period)	from	1.1.2006 to 28.5.2006)				
Odd	days in 400 years = $0$						
5 yea	ars = (4  ordinary years + 1  leap years)	vear) =	$= (4 \times 1 + 1 \times 2) = 6 \text{ odd } da$				
Jan. Feb. March April May							
(31 + 28 + 31 + 30 + 28) = 148 days							
·· 14	48  days = (21  weeks + 1  day) =	1  od	l day.				
Total	number of odd days = $(0 + 0 + 0)$	о + 1)	$= i \equiv 0$ odd day.				
Giver	i uay is Sulluay.						

- 3. What was the day of the week on 17th June, 1998?
  - <u>A.</u> Monday <u>B.</u> Tuesday



2.

	<u>C.</u>	Wednesday	<u>D.</u>	Thursday					
	Answ	ver: Option C							
1	Answer Explanation $17^{th}$ Codd $0$ Odd $0$ Odd $0$ 97 ye Num Jan. (31 + 1) Total Given	ver: Option C anation: June, 1998 = $(1997 \text{ years} + \text{Peri})$ days in 1600 years = 0 days in 300 years = $(5 \times 3) = 1$ ears has 24 leap years + 73 ordin ber of odd days in 97 years (24 Feb. March April May 28 + 31 + 30 + 31 + 1 58 days = 24 weeks = 0 odd days number of odd days = $(0 + 1 + 2)$ h day is Wednesday.	od fro nary y x 2 + June (7) = 1 (2 + 0)	m 1.1.1998 to 17.6.1998) years. 73) = 121 = 2 odd days. 68 days = 3.					
4.	what	will be the day of the week 15 <sup>th</sup>	Augu	1st, 2010?					
	<u>A.</u>	Sunday	<u>B.</u>	Monday					
	<u>C.</u>	Tuesday	<u>D.</u>	Friday					
	<b>Explanation:</b> 15 <sup>th</sup> August, 2010 = (2009 years + Period 1.1.2010 to 15.8.2010) Odd days in 1600 years = 0 9 years = (2 leap years + 7 ordinary years) = $(2 \ge 2 + 7 \ge 1) = 11$ odd days = 4 odd days. Jan. Feb. March April May June July Aug. (31 + 28 + 31 + 30 + 31 + 30 + 31 + 15) = 227 days $\therefore 227$ days = $(32 \le 3 \le$								
5.	Toda	<mark>y is Monday. After 61 days, it w</mark> i	ill be:						
	<u>A.</u>	Wednesday	<u>B.</u>	Saturday					
	<u>C.</u>	Tuesday	<u>D.</u>	Thursday					
	<b>Answ</b> <b>Expl</b> a Each So, a	<b>ver:</b> Option <b>B</b> anation: day of the week is repeated afte fter 63 days, it will be Monday.	er 7 da	ays.					

- $\therefore$  After 61 days, it will be Saturday.
- 6. **If 6<sup>th</sup> March, 2005 is Monday,** what was the day of the week on 6<sup>th</sup> March, 2004?

4 ANDROID APP ON Google Play

#### **GENERAL MENTAL ABILITY**

A. Sunday

**C**.

**B.** Saturday

<u>**D.</u>** Wednesday</u>

Answer: Option A Explanation:

Tuesday

The year 2004 is a leap year. So, it has 2 odd days.

But, Feb 2004 not included because we are calculating from March 2004 to March 2005. So it has 1 odd day only.

 $\dot{\cdot} \cdot$  The day on 6th March, 2005 will be 1 day beyond the day on 6th March, 2004.

Given that, 6<sup>th</sup> March, 2005 is Monday.

 $\therefore$  6<sup>th</sup> March, 2004 is Sunday (1 day before to 6<sup>th</sup> March, 2005).

7. On what dates of April, 2001 did Wednesday fall? 1st, 8th, 15th, 22nd, 29th 2nd, 9th, 16th, 23rd, 30th В. Α. **C**. 3<sup>rd</sup>, 10<sup>th</sup>, 17<sup>th</sup>, 24<sup>th</sup> 4th, 11th, 18th, 25th D. Answer: Option D **Explanation**: We shall find the day on 1<sup>st</sup> April, 2001. 1<sup>st</sup> April, 2001 = (2000 years + Period from 1.1.2001 to 1.4.2001) Odd days in 1600 years = 0 Odd days in 400 years = 0 Jan. Feb. March April (31 + 28 + 31 + 1) = 91 days = 0 odd days. Total number of odd days = (0 + 0 + 0) = 0On 1<sup>st</sup> April, 2001 it was Sunday. In April, 2001 Wednesday falls on 4th, 11th, 18th and 25th. 8. How many days are there in x weeks x days?  $7x^2$ В. 8*x* А. 14x**C**. 7 D. Answer: Option B **Explanation:** x weeks x days = (7x + x) days = 8x days. 9. The last day of a century cannot be Α. Monday В. Wednesday С. Tuesday Friday D. **Answer:** Option **C Explanation**: 100 years contain 5 odd days. Google Play www.amkresourceinfo.com

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∴ Last day of 1<sup>st</sup> century is Friday. 200 years contain  $(5 \times 2) = 3$  odd days. ∴ Last day of 2<sup>nd</sup> century is Wednesday. 300 years contain  $(5 \times 3) = 15 = 1$  odd day. ∴ Last day of 3<sup>rd</sup> century is Monday. 400 years contain 0 odd day. ∴ Last day of 4<sup>th</sup> century is Sunday. This cycle is repeated. : Last day of a century cannot be Tuesday or Thursday or Saturday. 10. On 8th Feb, 2005 it was Tuesday. What was the day of the week on 8<sup>th</sup> Feb, 2004? Monday <u>A.</u> Tuesday <u>B.</u> Wednesday C. Sunday D. **Answer:** Option **C Explanation:** The year 2004 is a leap year. It has 2 odd days.  $\therefore$  The day on 8<sup>th</sup> Feb, 2004 is 2 days before the day on 8<sup>th</sup> Feb, 2005. Hence, this day is Sunday. 11. The calendar for the year 2007 will be the same for the year: 2014 2016 Α. В. **C**. 2017 2018 D. Answer: Option D **Explanation:** Count the number of odd days from the year 2007 onwards to get the sum equal to 0 odd day. Year : 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 Odd day : 1 2 1 2 1 1 1 2 1 1 1 Sum = 14 odd days = 0 odd days. $\therefore$  Calendar for the year 2018 will be the same as for the year 2007. 12. Which of the following is not a leap year? А. 700 В. 800 **C**. 1200 D. 2000 **Answer:** Option **A Explanation:** The century divisible by 400 is a leap year.  $\therefore$  The year 700 is not a leap year. 13. On 8<sup>th</sup> Dec, 2007 Saturday falls. What day of the week was it on 8<sup>th</sup> Dec,

2006?

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	<u>A.</u>	Sunday	<u>B.</u>	Thursday				
	<u>C.</u>	Tuesday	<u>D.</u>	Friday				
14	Answ Expla The y So, th 2006. But, $8$ $\therefore$ 8 <sup>th</sup>	er: Option <b>D</b> ear 2006 is an ordinary year. So he day on 8 <sup>th</sup> Dec, 2007 will be 2 8 <sup>th</sup> Dec, 2007 is Saturday. Dec, 2006 is Friday.	o, it h l day	has 1 odd day. beyond the day on 8 <sup>th</sup> I the week lies on Jan 1	Dec, 20092			
I	<u>A.</u>	Monday	<u><b>B.</b></u>	Wednesday	2005.			
	<u>C.</u>	Thursday	<u>D.</u>	Sunday				
15.	1 <sup>st</sup> da So, 1 <sup>s</sup> Hence	y of the year 2008 is Tuesday ( <sup>st</sup> day of the year 2009 is 2 days e, it will be Thursday.	day o	ond Tuesday. of the week lies on Jan.	1,			
	<u>A.</u>	Monday	<u>B.</u>	Tuesday				
	<u>C.</u>	Wednesday	<u>D.</u>	Sunday				
	Answer: Option B Explanation: The year 2007 is an ordinary year. So, it has 1 odd day. 1 <sup>st</sup> day of the year 2007 was Monday. 1 <sup>st</sup> day of the year 2008 will be 1 day beyond Monday. Hence, it will be Tuesday.							
1. 1 mu	If the : ist hay	first day of the year 1991 was 7e been on 1st January, 1998	s Tue ?	sday, what day of the	week			
0	Mond	ay We	ednes	day				
0	Tuesc	lay <sup>O</sup> <sub>Th</sub>	ursda	ay				
2. '	The ye	ear next to 1996 having the same	ame	calender as that of 199	96 is:			



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° <sub>2003</sub>	° <sub>2001</sub>
° 2002	° 2004
3. Today is 1st April. The da year. The day of the week or	y of the week is Wednesday. This is a leap n this day after 3 years will be:
° Saturday	° Friday
Sunday	Tuesday
4. The day on 5th March of a thesam <mark>e year?</mark>	a year is the same day on what date of
C 5th Aug.	C 5th Nov.
O 5th Oct.	• 5th Dec.
5. Janu <mark>ary 1</mark> , 1992 was Wed January 1,1993?	nesday. What day of the week was on
• Tuesday	• Friday
C Thursday	Monday
6. On 8 <mark>th F</mark> eb, 1995 it was V 1994 was	Vednesday. The day of the week on 8th Feb,
• Wedneday	• Tuesday
• Thursday	• None of these
7. Toda <mark>y is Tuesday. After 6</mark>	2 days it will be:
<sup>C</sup> Wednesday	• Thursday
• Monday	° Sunday
8. The first republic day of I It was	ndia was celebrated on 26th January, 1950.
Monday	C Thursday
Tuesday	° Friday

9. January 1, 1995 was a Sunday. What day of the week lies on January

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#### 1, 1996?

0	Sunday	0	Saturday
0	Monday	0	None of these

## 10. How many days are there from 2nd January 1995 to 15th March, 1995?

0	71	0	73
0	72	0	74

## CLOCKS

#### IMPORTANT FORMULAE

#### 1. Minute Spaces:

The face or dial of watch is a circle whose circumference is divided into 60 equal parts, called minute spaces.

#### Hour Hand and Minute Hand:

A clock has two hands, the smaller one is called the **hour hand** or **short hand** while the larger one is called **minute hand** or **long hand**.

2.

- In 60 minutes, the minute hand gains 55 minutes on the hour on the hour hand.
- In every hour, both the hands coincide once.
- The hands are in the same straight line when they are coincident or opposite to each other.
- When the two hands are at right angles, they are 15 minute spaces apart.
- When the hands are in opposite directions, they are 30 minute spaces apart.
- Angle traced by hour hand in 12 hrs = 360°
- Angle traced by minute hand in 60 min. = 360°.
- If a watch or a clock indicates 8.15, when the correct time is 8, it is said to be 15 minutes **too fast**.
- On the other hand, if it indicates 7.45, when the correct time is 8, it is said to be 15 minutes **too slow**.
- The hands of a clock will be in straight line but opposite in direction, 22 times in a day
- The hands of a clock coincide 22 times in a day
- The hands of a clock are straight 44 times in a day
- The hands of a clock are at right angles 44 times in a day
- The two hands of a clock will be together between H and (H+1) o' clock at (60H11)minutes past H o' clock.



#### **GENERAL MENTAL ABILITY**

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.** 144° **B.** 150°

**C.** 168° **D.** 180°

#### Answer: Option D Explanation:

Angle traced by the hour hand in 6 hours =  $\left(\frac{360}{12} \ge 6\right)^\circ = 180^\circ$ .

2. The reflex angle between the hands of a clock at 10.25 is:

A.	180°	В.	$192 \frac{1}{2}^{\circ}$
C.	195°	D.	$197 \frac{1}{2}^{\circ}$

Answer: Option D Explanation:

- Angle traced by hour hand in  $\frac{125}{12}$  hrs =  $\left(\frac{360}{12} \times \frac{125}{12}\right)^{\circ} = 312\frac{1}{2}^{\circ}$ . Angle traced by minute hand in 25 min =  $\left(\frac{360}{60} \times 25\right)^{\circ} = 150^{\circ}$ .  $\therefore$  Reflex angle =  $360^{\circ} - \left(312\frac{1}{2} - 150\right)^{\circ} = 360^{\circ} - 162\frac{1}{2}^{\circ} = 197\frac{1}{2}$ .
- 3. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:

А.	145°	В.	150°	
С.	155°	D.	160°	
Ans	ver: Option C			
Expi	anation:			
Angl	e traced by hour hand in 12 hrs	= 360	0°.	

Angle traced by hour hand in 5 hrs 10  $\frac{31}{6}$  hrs  $\left(\frac{360}{12} \times \frac{31}{6}\right)^{\circ} = 155^{\circ}$ .

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.**  $59\frac{1}{10}$  min. past 3

**B.** 4 p.m.

10 ANDROID APP ON Google Play

#### **GENERAL MENTAL ABILITY**

C. 
$$58\frac{7}{11}$$
 min. past 3  
D.  $2\frac{3}{11}$  min. past 4  
Answer: Option B  
Explanation:  
Time from 7 a.m. to 4.15 p.m. = 9 hrs 15 min. =  $\frac{37}{4}$  hrs.  
3 min. 5 sec. of this clock = 3 min. of the correct clock.  
 $\Rightarrow \frac{37}{720}$  hrs of this clock =  $\frac{1}{20}$  hrs of the correct clock.  
 $\Rightarrow \frac{37}{4}$  hrs of this clock =  $\left(\frac{1}{20} \times \frac{720}{37} \times \frac{37}{4}\right)$  hrs of the correct clock.  
 $\Rightarrow 9$  hrs of the correct clock.  
 $\therefore$  The correct time is 9 hrs after 7 a.m. *i.e.*, 4 p.m.  
How much does a watch lose per day, if its hands coincide every 64  
minutes?  
A.  $32\frac{8}{11}$  min.  
B.  $36\frac{5}{11}$  min.  
C. 90 min.  
D. 96 min.  
Answer: Option A

#### **Explanation:**

5.

55 min. spaces are covered in 60 min.

60 min. spaces are covered in  $\left(\frac{60}{55} \ge 60\right)_{\text{min.}} = 65\frac{5}{11}$  min. Loss in 64 min. =  $\left(65\frac{5}{11} - 64\right) = \frac{16}{11}$  min. Loss in 24 hrs =  $\left(\frac{16}{11} \ge \frac{1}{64} \ge 24 \ge 60\right)_{\text{min.}} = 32\frac{8}{11}$  min.

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.
 5 min. past 7
 B.
 
$$5\frac{2}{11}$$
 min. past 7

 C.
  $5\frac{3}{11}$  min. past 7
 D.
  $5\frac{5}{11}$  min. past 7

**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.

 $\therefore$  Minute hand will have to gain only 5 min. spaces.

11 Soogle Play

#### GENERAL MENTAL ABILITY



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#### **GENERAL MENTAL ABILITY**

Angle traced by min. hand in 15 min. =  $\left(\frac{360}{60} \ge 15\right)^{\circ} = 90^{\circ}$ .  $\therefore$  Required angle =  $\left(157\frac{1}{2}\right)^{\circ} - 90^{\circ} = 67\frac{1}{2}^{\circ}$ 

10. At 3.40, the hour hand and the minute hand of a clock form an angle of:

**A.** 120° **B.** 125°

<b>C</b> .	130°	D.	135°
<b>C</b> .	130°	D.	135

**Answer:** Option **C Explanation:** Angle traced by hour hand in 12 hrs. = 360°.

Angle traced by it in  $\frac{11}{3}$  hrs =  $\left(\frac{360}{12} \times \frac{11}{3}\right)^{\circ} = 110^{\circ}$ . Angle traced by minute hand in 60 min. = 360°. Angle traced by it in 40 min. =  $\left(\frac{360}{60} \times 40\right)^{\circ} = 240^{\circ}$ .  $\therefore$  Required angle  $(240 - 110)^{\circ} = 130^{\circ}$ .

11. How many times are the hands of a clock at right angle in a day?

А.	22	247 1	В.	24
С.	44	000	D.	48

Answer: Option C Explanation:

In 12 hours, they are at right angles 22 times. ∴ In 24 hours, they are at right angles 44 times. View Answer Workspace Report Discuss in Forum

- 12. The angle between the minute hand and the hour hand of a clock when the time is 8.30, is:
  - A.
     80°
     B.
     75°

     C.
     60°
     D.
     105°

#### Answer: Option B Explanation:

Angle traced by hour hand in  $\frac{17}{2}$  hrs =  $\left(\frac{360}{12} \times \frac{17}{2}\right)^{\circ} = 255$ . Angle traced by min. hand in 30 min. =  $\left(\frac{360}{60} \times 30\right)^{\circ} = 180$ .  $\therefore$  Required angle =  $(255 - 180)^{\circ} = 75^{\circ}$ .

13. How many times in a day, are the hands of a clock in straight line but opposite in direction?

13 Google Play

#### **GENERAL MENTAL ABILITY**

А.	20	В.	22
С.	24	D.	48

#### 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.

14. At what time between 4 and 5 o'clock will the hands of a watch point in opposite directions?



#### 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.

- ··· Minute hand will have to gain 50 min. spaces.
- 55 min. spaces are gained in 60 min.
- 50 min. spaces are gained in  $\left(\frac{60}{55} \times 50\right)_{\text{min. or } 5411} \frac{6}{11}$  min.

$$\therefore$$
 Required time =  $54\frac{6}{11}$  min. past 4

At what time between 9 and 10 o'clock will the hands of a watch be 15. together?

А.	45 min. past 9	В.	50 min. past 9
C.	$49\frac{1}{11}$ min. past 9	D.	$48\frac{2}{11}$ min. past 9

#### 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  $\left(\frac{60}{55} \ge 45\right)_{\text{min or } 4911}$  min.
- $\therefore$  The hands are together at  $49\frac{1}{11}$  min. past 9.
- 16. At what time, in minutes, between 3 o'clock and 4 o'clock, both the needles will coincide each other?

**A.** 
$$5\frac{1}{11}^{"}$$
 **B.** 12

14 ANDROID APP ON Google Play

GENERAL MENTAL ABILITY

#### A M K RESOURCE WORLD

**C.** 
$$13\frac{4}{11}$$

**D.**  $16\frac{4}{11}$ 

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  $\left(\frac{60}{55} \ge 15\right)_{\text{min}} = 16\frac{4}{11}$  min.

 $\therefore$  The hands are coincident at  $16\frac{4}{11}$  min. past 3.

17. How many times do the hands of a clock coincide in a day?

А.	20	В.	21
C.	22	D.	24

#### 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).

The hands overlap about every 65 minutes, not every 60 minutes.  $\therefore$  The hands coincide 22 times in a day.

18. How many times in a day, the hands of a clock are straight?

А.	22	В.	24
C.	44	D.	48

Answer: Option C

#### Explanation:

In 12 hours, the hands coincide or are in opposite direction 22 times.  $\therefore$  In 24 hours, the hands coincide or are in opposite direction 44 times a day.

- 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.** 2 p.m. on Tuesday
- **B.** 2 p.m. on Wednesday

**C.** 3 p.m. on Thursday

**D.** 1 p.m. on Friday

#### 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.

 $\therefore$  The watch gains  $\left(2 + 4\frac{4}{5}\right)_{\text{min.}}$  or  $\frac{34}{5}$  min. in 170 hrs.

Now, 34 min. are gained in 170 hrs.



**GENERAL MENTAL ABILITY** 

5

 $\therefore$  2 min. are gained in  $\left(170 \times \frac{5}{34} \times 2\right)_{\text{hrs}}$  = 50 hrs.

 $\therefore$  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.

1. At 3.40, the hour hand and the minute hand of a clock form an angle of: -

0	120 <sup>°</sup>	0	130 <sup>0</sup>
0	125°	0	135 <sup>0</sup>

2. The angle between the minut hand and the hour hand of a clock when the time is 4.20 is

0	0	0	20
0	5	0	10

3. How many times do the hands of a clock coincide in a day ?

0	24	0	21
0	20	0	22

4. A watch which gains uniformly is 2 minute slow at noon on Monday and is 4 mm. 48 sec fast at2 p.m. on the following Monday. When was it correct ?

0	2 p.m. on Tuesday	0	3 p.m. on Thursday
0	2 p.m. on Wednesday	0	1 p.m. on Friday

5. the angle between the minute hand and the hour hand of a clock when the time is 8.30, is

° 80°

° 60°



GENERAL MENTAL ABILITY

° 75°	° 105°
6. How many times in a day, the	e hands of a clock are straight?
° <sub>22</sub>	° 44
° <sub>24</sub>	° <sub>48</sub>
7. How many times are the hand	is of a . clock at right angles in a day ?
° <sub>22</sub>	° 44
° <sub>24</sub>	° <sub>48</sub>
8. How many times do the hand inaday?	ds of a clock point towards each other
° <sub>12</sub>	° <sub>22</sub>
° <sub>20</sub>	° <sub>24</sub>
1. An accurate clock shows 8 o' degrees will the hour hand rotat	clock in the morning. Through how may
A. 154°	B. 180°
C. 170°	D. 160°
2. A clock is started at noon. By	y 10 minutes past 5, the hour hand has
A 155°	B 145°
C. 152°	D. 140°
3. At what time between 7 and 8 same straight line but, not togethe	o'clock will the hands of a clock be in the
A. 5 minutes past 7	B. 5311 miinutes past 7
C. 5111 minutes past 7	D. 5511 minutes past 7
4. At what time between 5.30 an angles?	nd 6 will the hands of a clock be at right
A. 44 minutes past 5	B. 44711 minutes past 5
17 ANDROID APP ON Google Play	www.amkresourceinfo.com

# A M K RESOURCE WORLDGENERAL MENTAL ABILITYC. 43711 minutes past 5D. 43 minutes past 5

5. At what angle the hands of a clock are inclined at 15 minutes past 5?
A. 6712°
B. 6212°
C. 70°
D. 6334°

6. At 3.40, the hour hand and the minute hand of a clock form an angle of
A. 135°
B. 130°
C. 120°
D. 125°

7. The angle between the minute hand and the hour hand of a clock when the time is 8.30, is

A. 75°	B.	85°
C. 80°	D.	70°

8. How many times in a day, are the hands of a clock in straight line but opposite in direction?

A. 48	B. 22
C. 24	D. 12

9. At what time between 3 o'clock and 4 o'clock, both the needles of a clock will coincide each other?

A. 1621	1 minutes past 3	B. 16411 minutes past 3
C. 1541	1 minutes past 3	D. 15211 minutes past 3
10. How	many times will t	the hands of a clock coincide in a day?
A. 24		B. 22
C. 20		D. 21

11. How many times in a day, the hands of a clock are straight

A. 22	B. 44
C. 48	D. 24

12. How much does a watch lose per day, if its hands coincide every 64 minutes?
A. 34111 minute
B. 32811 minute
D. 33211 minute

13. At what time between 9 and 10 o' clock will the hands of a clock be together?
A. 4529 min past 9
C. 48112 min past 9
D. 47215 min past 9



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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. 53611 minutes past 4	B. 53711 minutes past 4			
C. 54611 minutes past 4	$D_{\rm c}$ 54711 minutes past 4			
15. 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. 3 pm	B. 3.45 pm			
C. 3.30 pm	D. 4 pm			
16. How many times are the hands of a clock at right angle in a day?				
A. 48	B. 44			
C. 24	D. 22			
17. A watch which gains uniformly is 2 minutes low at noon on and is 4 min				
48 sec last at 2 pm on the following Monday. When was it correct?				
A. 2 phi on Tuesday	B. 3 pm on Wednesday			
C. 2 pm on Wednesday	D. 3 pm on Tuesday			
18. What is the reflex angle between	en the hands of a clock at 10.25?			
A 195° B 19712°				
C. 180°	. 19312°			
and the second se	NAMES OF TAXABLE PARTY			
19. The angle between the minute hand and the hour hand of a clock when the time is 4.20 is				
A. 10°	B. 5°			
C. 0°	D. 1°			
20. A clock is set at 5 am. If the clock loses 16 minutes in 24 hours, what will be the true time when the clock indicates 10 pm on 4th day? A. 9.30 pm B. 10 pm				
C. 10.30 pm D. 11 pm				
21. What is the angle between the hour and the minute hand of a clock when the time is 3.25?				
A. 47 B.	4612			
C. 46 D.	4712			

22. At what time between 8 and 9 o'clock will the hands of a clock are in the

19 ANDROID APP ON Google Play

#### **GENERAL MENTAL ABILITY**

same straight line but not together?				
A. 11811 minutes past 8	B. 10811 minutes past 8			
C. 111011 minutes past 8	D. 101011 minutes past 8			
23. At what time between 2 and 3 o'clock will the hands of a clock be together?				
A. 91111 minutes past 2	B. 91011 minutes past 2			
C. 101111 minutes past 2	D. 101011 minutes past 2			
24. At what time between 5 and 6 'o clock, will the hands of a clock be at right angle?				
A. 1010 <mark>11 minutes past 5</mark>	B. 101011 minutes past 5			
and 43711 minutes past 5	and 42711 minutes past 5			
C. 10911 minutes past and 42711 minutes past 5	5 D. 10911 minutes past 5 and 42711 minutes past 5			
25. The minute hand of a clock overtakes the hour hand at intervals of 65 minutes. How much a day does the clock gain or loss?				
A. 109143 minutes	B. 119143 minutes			
C. 1110143 minutes	D. 1010143 minutes			
26. Find the time between 4 and 5'o clock, when the two hands of a clock are 4 minutes apart?				
A. 26211 minutes past 4	B. 26111 minutes past 4			
and 17511 minutes past 4	and 17511 minutes past 4			
C. 26211 minutes past 4	D. 26111 minutes past 4			
and 17411 minutes past 4	and 17411 minutes past 4			
27. At what time between 5 and 6 wil	I the hands of the clock coincide?			
A. 26211 minutes past 5	B. 26311 minutes past 5			
C. 28311 minutes past 5	D. 27311 minutes past 5			
28. At what time between 6 and 7 will the hands be perpendicular				
A. 48111 minutes past 6 B. 48 minutes past 6				
and 16411 minutes past 6	and 16311 minutes past 6			
C. 49111 minutes past 6	D. 48211 minutes past 6			
and 16411 minutes past 6	and 16311 minutes past 6			
29. What is the angle between the hands at 4.40?				
A. 95°	B. 100°			
C. 120°	D. 110°			

30. A clock strikes 4 taking 9 seconds. In order to strike 12 at the same rate, the time taken is



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- A. 33 seconds
- C. 36 seconds

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- B. 30 seconds
- D. 27 seconds



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21

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