Mock Test Number: 006

1. Raj writes a no of two digits exceeds four times the sum of its digits by three. If the number is increased by eighteen then the result is the same as the number form by reversing the digits find the number?

A. 35 ✓
B. 42
C. 49
D. 57

Answer:

1st condition $xy = 4(x+y)+3$

IInd condition $xy + 18 = yx$

Using IInd option & applying on option

we get $35 + 18 = 53$

$\therefore$ 35

2. 28a+30b+31c=365 solve and find a, b, c & find a+b+c?

A. 10
B. 11
C. 12 ✓
D. 13

Answer:

Very different technique is used to solve we can get one pair of a, b, c. Rest can be multiple of it.

$28a + 30b + 31c = 365$ (DAYS IN AN YEAR)

1 4 7

[One month has 28 days
4 months have 30 days
7 months have 31 days]

$\therefore 28 + 30 \times 4 + 31 \times 7 = 365$

$a+b+c = 1+4+7 = 12$

3. George---8hrs
Paul---------10 hrs

Hari--------12 hrs
If all the three starts work at 9 am, at 11 George leaves how long it takes pawl and hari to complete the remaining work

A. 11:30am
B. 12:00pm
C. 12:30 pm
D. 1:00 pm

Answer:

LCM(8, 10, 12) ⟶ 120

$G = \frac{120}{8} = 15$ U/D $P = 120/10 = 12$ U/D , $H = \frac{120}{12} = 10$ U/D

From,

9 ↓ 11 P+H

15+12+10 = 37

Till 11.00 37 × 2 = 74 parts of work are done.

∴ 120 − 74 = 46 units of work

$\frac{46}{22} \simeq 2$ hr So By 1.00 pm (approx)

4. Find last two digits of (1941^3843)+(1961^4181)

A. 80
B. 82
C. 90
D. 91

Answer: 82

Last two digits of 1941^{3843}

$1941^{3840} \rightarrow 01$

$1941^{3841} \rightarrow 01 \times 41 = 41$

$1941^{3842} \rightarrow 41 \times 41 = 1681$

$1941^{3843} \rightarrow 81 \times 41 = 3321$

Last two digits is 21

Last two digits of 1961^{4181}.

$1961^{4180} \rightarrow 01$

$1961^{4181} \rightarrow 01 \times 61 = 61$

Last two digits of 1961^{4181} are 61

Thus $1941^{3843} + 1961^{4181} = 2H61 = 82$

5. Lemon and apple =12
Tomato and apple =4
Apple is less then lemon by 8
l+8=a, b) l+a=12, c) t+l=4, d) l+8=a

A. 1
B. 2
C. 3
D. 4

Answer: Solving the 4 equations

$l = 2$

6. An organization has three committees only two people are common for all three committees but every pair committee has 3 members in common what is least possible of members in one committee

A. 4
B. 5
C. 6
D. 7

Answer:

4

7. D=4 G=7

Decode MKIGF

A. 11 13 14 5 9

B. 5 6 7 14 12

C. 13 11 9 7 6

D. None of these

Answer:

M	K	I	G	F
↓	↓	↓	↓	↓
13	11	9	7	6

8. 641+852+973=2456 is incorrect which is the largest number that has to be changed to make the addition correct

A. 5

B. 6

C. 4

D. 7

Answer:

641
852
973
2466

Out of 4, 5, 7 7 is highest so it will be replaced by 6.

Hence 7 is to be changed.

9. A circle has 29 points arranged in a clock wise manner. no for 0 to 28, a bug moves clockwise around the circle according to the following rule, if it is at a point on the circle. It moves clockwise around the circle, it moves clockwise in one second by(1+r) places, where r is the reminder when it is divided by 17. Thus if it is a point to 5, it moves clockwise in one second (1+5) places to point 11, similarly it is at position 28 it moves (1+11)→ twelve places to point 11 in one seconds if it starts from zero at what point it will be after 2012 seconds?

A. 2

B. 3

C. 1

D. 4

Answer: Now If it is at position zero.

Sec	1(1+r)	Step to Move	Loc		
1	1+0	1	1	r = 0 % 17 = 0	2008
2	1+1	2	3	r = 1 % 17 = 1	2009
3	1+3	4	7	r = 3 % 17 = 3	2010
4	1+7	8	15	r = 7 % 17 = 7	2011
5	1+15	16	2	r = 15 % 17 = 15	2012
6	1+2	3	5	r = 2 % 17 = 2	2013
7	1+5	6	11	r = 5 % 17 = 5	
8	1+11	12	23	r = 11 % 17 = 11	
9	1+6	7	1	r = 23 % 17 = 6	2007

So after Nine second Bug is again at position 1

So 2012 % 9 = 5

So after 2007 second Bug will be at 1 again.

So 2012 Loc will be 2.

10. when numbers are written in base b we have 12*25 =333, the value of b is

A. 7

B. 6

C. 8

D. 9

Answer:

$1 \times b^1 * 2 \times b^0 + 2 * b^1 \times 5 \times b^0 = 3 \times b^2 + 3 \times b^1 + 3 \times b^0$

$(b+2)(2b+5) = 3b^2 + 3b + 3$

$2b^2 + 9b + 10 = 3b^2 + 3b + 3$

$b^2 - 6b - 7 = 0$

$(b+1)(b-7)$

$b = -1$ (not possible) or $b = 7$ (Ans)

11. x*y2 *z<0 which is true

A. zx<0

B. z<0 (Not possible)

C. xyz<0 (Not possible)

D. none of these

Answer:

12. The marked price coat was 40% less than suggested retail price. Eesha purchased the coat for half the market price at sale. What percentage less than the suggested price?

A. 80%

B. 70%

C. 58%

D. 22%

Answer:

From 1st sentence = 40% reduced

and sentence = 60% remains

Esha purchased half of MP = 30%.

∴ Total savings 30 + 40 = 70%

13. The cost of cow and horse is 200000. The cow was sold at the profit of 20% and horse at a loss of 10%. The overall gain is 40,00 . The cost price of cow is

A. 80,000

B. 120,000

C. 7,000

D. 1,000

Answer: Let the cost price of cow and horse is C & H respectively.

$C + H = 200000$ ——(1)

$1.2C + .8H = 204000$ ——(2)

Solving eqn (1) & (2)

$C = 80000$

14. In a certain city 60% of the registered voter supported Congress and the rest BJP. In an assembly election, if 75% of Congress and 20% of BJP voted candidate b , what percentage did a got?

A. 48
B. 53
C. 59
D. 60

Answer:

Take 100 members

60 % Congress 40% BJP

75 % of 60 + 20 % of 40

$= 3/4 \times 60 + 20/100 \times 40$

$= 45 + 8 = 53$

15. The mean of three nos. is ten more than the least of the nos as less than greatest of the three. If the median of the three is 5, then the sum of three is

A. 5
B. 20
C. 30
D. 25

Answer: Let three numbers be x, y, z arranged in value order, given median is 5.

So $y = 5$

mean $= (x+5+z)/3 = x = 10$ & $(x+5+z)/3 = z - 15$.

Equating R.H.S eqns, we get $z - x = 25$, But from 1st eqn we get $z - 3x = 25$

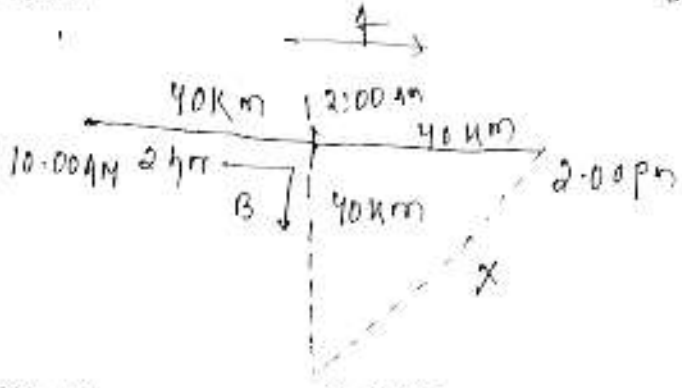
Solving these two $x = 0$ & $z = 25$

Sum $= 0+5+25 = 30$

16. A and B starts from their house at 10 am. They travel from their house on MG Road at 20 km/hr and 20 km/hr. There is a junction at 12 noon. B reaches at the junction and turns right. Both of them continue travelling till 2 pm. What is the distance between them at 2 pm?

A. 160km
B. 120km
C. 140km
D. 150km

Answer:



$X = \sqrt{40^2 + 40^2}$

$= 56.56$ Km

There is an umption that both of there house is just opposite to each other, on MG Road.

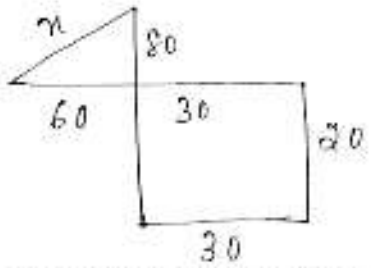
17. . A child was looking at his father. He went 19 meters in the east before turning to his right. Then went 20 meters before turning to his right again to look his father at the uncle's place. 30 mtrs from this point. His father was not there. From here he went 100mtrs. To the north before meeting his father in a street. How far did the son meet his father?

A. 120m
B. 200m
C. 100m
D. None of these

Answer:

$x = \sqrt{60^2 + 80^2}$

$= 100\ m$



18. . In an office at various times during the day the boss gives a secretary a letter to type. Each time putting the letter on top of the pile in the secretary, where there is in time, the secretary takes the top letter of the pile and type if there are 5 letters in all and the boss delivered them in an order 12345, which of the following could be the order in which the secretary types it?

A. 24351
B. 45231
C. 32145
D. 12345

Answer:

Answer = A Check by option

5
4
3 → 2 → Type
2 → 1
1

4 → Type
3 → Type
1

5 → Type
1 → Type

19. Jack is faster than Paul. Jack and Paul each walk 20km. The sum of their speed is 7km/hr and the sum of their time taken is 14 hrs. What is the speed of Jack?

A. 3
B. 4
C. 2
D. 1

Answer:

$S_1 = \frac{D}{T_1}, S_2 = \frac{D}{T_2}$ $S_1 + S_2 = \frac{D}{T_1} + \frac{D}{T_2} = \frac{D(T_1+T_2)}{T_1 - T_2} \Rightarrow T_1 + T_2 = 14$

$D = 24$

$T_1 - T_2 = 48 \quad (I)$

$T_1 + T_2 = 14 \quad (II)$

By solving (I) & (II) $\rightarrow T_1 = 6,\ T_2 = 8$

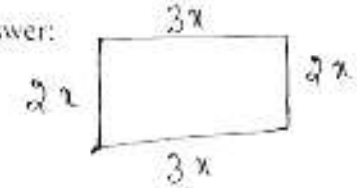
$S_1 = 24/6 = 4,\ S_2 = 24/8 = 3$

∴ Paul = 3 & Jack = 4

20. Raj drives slowly along the perimeter of the rectangle part at 24km/hr and completes full round in 4 minutes. IF the ratio of the length to the breadth of the part by 3:2, what is the dimension?

A. 450 x 300 m
B. 150 x 100 m
C. 480 x 320 m
D. 100 x 100 m

Answer:



$24\ km/hr = \frac{400}{min} = 4M \rightarrow 1600$

$2(l+b) = 1600$

$2(3x+2y) = 1600$

$x = 160$

$2x = 320$

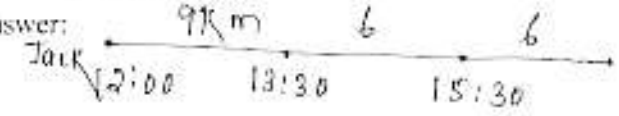
$3x = 480$

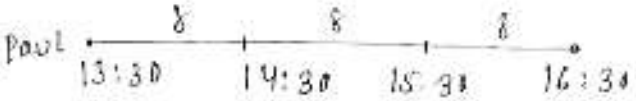
480 x 320

21. At 12:00 Jack starts to walk from his house at 6km/hr. At 13:30 starts Paul follows him from Jack's house on his bicycle at 8 km/hr. When will Jack be 3km behind Paul?

A. 19.30
B. 20.35
C. 48.32
D. None of these

Answer:





		J	P	
12:00	13:00	9	0	9
13:30	14:30	6	8	17
14:30	15:30	6	8	15
15:30	16:30	6	8	13
16:30	17:30	6	8	11
17:30	18:30	6	8	1-1
18:30	19:30	6	8	1-3

So at 19:30

22. $2^{71} + 2^{2055} + 2^{2n}$ -> perfect square. Then what is n?

A. 2020
B. 2000
C. 2400
D. None of these

Answer:

$n = 2020$

23. Find the answer of

$$\frac{44444445 \times 88888885 \times 44444442 + 44444438}{4444444^2}$$

A. 88888883

B. 8888847

C. 8579645

D. none of these

Answer:

$$X = 44444444$$

$$\frac{(x+1)(2x-3)(x-2)+x+6}{x^2} = (2x-5)$$

$$= 88888883$$

24.

20	6	22
5	8	12
75	42	102

$(20+5) \times 3 = 75$

$(6+8) \times 3 = 42$

⇔

12	15	3
6	X	12
54	81	45

$(12+6) \times 3 = 54$

$(15+x) \times 3 = 81$

$x = 12$

Find X

A. 12

B. 11

C. 89

D. 10

Answer:

25. 1-2+2-3+3-4,....-98+99=?

A. 40

B. 30

C. 60

D. 50

Answer:

$(1-2) = -1$

$(2-3) = -1$

$(3-4) = -1$

Hence till 98 there are 49 such pairs

so $-1(49)+99$

$= 50$

26. The length and breadth of a field is 300x400ft,if there are 3 ants on average per square inch of field,find the approximate number of ants in field

A. 518,40,000
B. 52800000
C. 258000
D. None of these

Answer:

No. of Ants = N (300 × 400ft²) = (300 × 12 × 400 × 12 inch²) × N

⇒ N = No. of Ant / Square Inch

No. of Ant = (300 × 12) (400 × 12) × 3

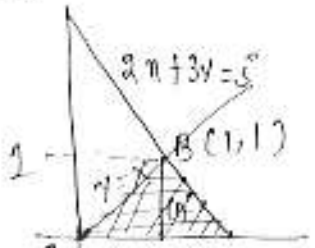
= 3600 × 4800 × 3

= 5, 18, 40, 000

27. Find the area (in square units) of the triangle formed by 2x+3y=5, y=x and X-Axis.

A. 5/3 unit²
B. 5/4 unit²
C. 5/8 unit²
D. None of these

Answer:



Area of ΔAOB

B is y=x & 2x+3y=5 intersection

So B = (1, 1)

A is 2x+3y=5 & y=0 x=5/2

A = (5/2, 0)

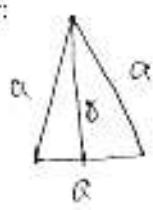
Area = ½ × B × H = ½ × 5/2 × 1

= 5/4 sq. unit

28. The ratio of perimeter of an equilateral triangle having an altitude equal to the radius of the circle, to the perimeter of an equilateral triangle inscribed in that circle is?

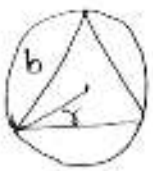
A. 2:5
B. 2:3
C. 5:2
D. None of these

Answer:



r = √3/2 a

a = 2r/√3



A circle with radius r & a Δ is inscribed in it.

r = b/√3

b = √3 r

Ratio of perimeter

3a : 3b = a : b

2r/√3 : r√3 ⇒ 2 : 3

29. Maximum number of identical pieces (of same size) of a cake by making only 3 cuts?

A. 6
B. 7
C. 8
D. None of these

Answer:

Not to worry about the size of each piece as that can be made equal by giving different orientation to the line.

There can be 7 pieces made.

30. 35674 term in 12345678910111213....

A. 4
B. 8
C. 6
D. 9

Answer:

No. of 1 digit no.s = 9X1 = 9

No. of 2 digit no.s = 90 X 2 = 180

No. of 3 digit no.s = 900 X 3 = 2700

2889 term all 3 digit

Out of 35674 term 2889 term all three digit are written.

No. of more digit = 35674 − 2889 = 32785

Number required = 32785/4 = 8196 X 4 + 1 ⇒ 8196 nos are required.

It will take us to 8196 + 999 = 9195

1st digit of next no. is 9 Ans

31. The number of bacteria was growing in a city exponentially. at 4 pm yesterday , the number of bacteria was 400 and at 6 pm yesterday it was 3600.How many bacteria were there at 7pm yesterday?

A. 11,500
B. 10,800
C. 14,200
D. None of these

Answer:

4PM → 400

5PM → 400a

6PM → $400a^2 = 3600$

$a^2 = 900$

$a = 30$

7PM → $400a^3$ = 10,800

32. Father is aged three times more than his son Ronit. After 8 years, he would be two and a half times of Ronit's age. After further 8 years, how many times would he be of Ronit's age?

A. 2
B. 5/2
C. 3/2
D. 1

Answer:

$F = R + 3R = 4R$

$F + 8 = 2.5\,(R + 8)$

$\Rightarrow R = 8,\ F = 32$

After 16 yrs, Rohit's age = 24

Father age = 48 $\therefore$ 2 times

33. Arun was all bent on building a new house. He carefully got the blue print of his house designed buy his friend Ashwin, a civil engineer. He wanted to build a room of dimension 27 by 48 ft and lay tiles in this room. Each tile was of dimension 2 by 3 ft. How many tiles should Arun buy?

A. 252
B. 210
C. 216
D. 220

Answer:

$$\text{No. of tiles} = \frac{27 \times 48}{2 \times 3} = 216$$

34. What should be added in 6440 that is when divided by 460 gives reminder 35.

A. 35
B. 25
C. 68
D. 95

Answer: 6440 is completely divisible by 460 so to get remainder of 35, 35 should be added.

35. Sum of 2 no is 50 and sum of their reciprocal is 1/12. So find these numbers.

A. 20&50
B. 90&80
C. 35&12
D. 20&30

Answer:

$a + b = 50$

$$\frac{1}{a} + \frac{1}{b} = \frac{1}{12} \Rightarrow \frac{a+b}{ab} = \frac{1}{12}$$

$$\Rightarrow \frac{a+b}{ab} = \frac{1}{12} \Rightarrow \frac{50}{ab} = \frac{1}{12} \Rightarrow ab = 50 \times 12 = 600$$

By hit and trial method,

$a = 30, b = 20$ or $b = 30, a = 20$