Quiz Date: 10th March 2020

Directions (1-5): In each of these questions a number series is given only one number is wrong in each series. You have to identify the wrong number.

Q1. 84, 97, 114, 133, 156, 187
(a) 114
(b) 156
(c) 84
(d) 187
(e) 97

Q2. 121, 170, 251, 372, 543, 766
(a) 766
(b) 170
(c) 121
(d) 251
(e) 543

Q3. 210, 70, 280, 56, 336, 49
(a) 49
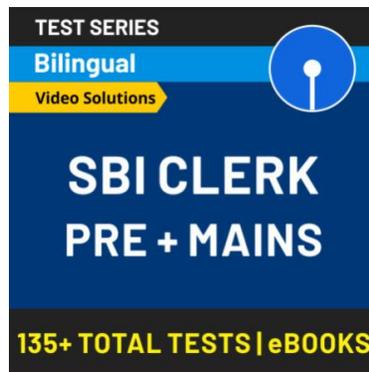(b) 210
(c) 56
(d) 70
(e) 280

Q4. 19, 140, 259, 376, 490, 604
(a) 490
(b) 259
(c) 376
(d) 604
(e) 19

Q5. 21, 23, 49, 151, 609, 3053
(a) 3053
(b) 23

(c) 21
(d) 609
(e) 151

Q6. A & B together can complete a work in $14\frac{2}{5}$ days while B & C together can complete the same work in $10\frac{2}{7}$ days. A alone starts work and after 8 days B replaced him. B did the work for next 12 days and the remaining work is completed by C in next 5 days, then find time taken by A, B & C together to complete that work, if C work with 50% of his usual efficiency?
(a) $9\frac{2}{9}$ days
(b) $7\frac{2}{7}$ days
(c) $9\frac{2}{7}$ days
(d) $10\frac{2}{7}$ days
(e) None of these

Q7. 12 men can do a work in 10 days while 15 women can do that work in 12 days and 20 children can do that work in 15 days. All men started work together and after five days they left the work then the remaining work was completed by nine women and X children in five days. Find value of X?
(a) 25
(b) 20
(c) 15
(d) 12
(e) 10

Q8. A shopkeeper have 3 juice machines, Ist for fresh oranges, then the remaining pulp(waste other than juice) of Ist machine is used in second and similarly remaining of 2nd machine is used for 3rd. If first machine, squeeze 90% by weight juice, second give 40% by weight and last give 16 ⅔% by weight juice. Find the amount of juice (in ml) obtained by shopkeeper in 1 kg of orange. [Assume 1 gm is equal to 1.05 ml]
(a) 950.5 ml
(b) 900 ml
(c) 1000 ml
(d) 950 m l
(e) 997.5 ml

Q9. Distance between Delhi and Jaipur is 300 km. Aman starts from Delhi and Rajiv from Jaipur at same time. After two hours, Aman realized he was travelling slow and therefore increased his speed by 25% and meet Rajiv at a point 108 km from Delhi. Find the increased speed of Aman, if Rajiv derived at a constant speed of 75 km/hr.
(a) 40 km/hr
(b) 50 km/hr
(c) 60 km/hr
(d) 55 km/hr

(e) 65 km/hr

Q10. Train-A and train-B crosses each other in 8 seconds, while running in opposite direction. Train-B crosses a pole in 8.4 seconds and train-A crosses a 90 meters long tunnel in 12 seconds. If speed of train-A is 15km/hr more than the speed of train-B, then find the ratio of length of train-A to length of train-B.
(a) 8 : 7
(b) 11 : 7
(c) 5 : 4
(d) 3 : 2
(e) None of the above.

Directions (11-15): In each of these questions a number series is given only one number is wrong in each series. You have to identify the wrong number.
Q11. 1.375,   1.25,   2.625, 3.875, 6.575, 10.375,   16.875
(a) 6.575
(b) 1.25
(c) 10.375
(d) 2.625
(e) 16.875

Q12.   18,   72,   36,   150,   72,   288
(a) 72
(b) 288
(c) 150
(d) 36
(e) 18

Q13.   25,   31,   44,   63,   93,   135
(a) 31
(b) 44
(c) 93
(d) 63
(e) 135

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Q14.   15,   27,   51,   87,   135,   196

(a) 87
(b) 27
(c) 15
(d) 51
(e) 196

Q15. 47, 57, 81, 130, 211, 332
(a) 57
(b) 130
(c) 211
(d) 332
(e) 81

Solutions

S1. Ans.(d)
Sol.

84   97   114   133   156   185

   +13   +17   +19   +23   +29

∴ 187 is wrong
Right no. = 156 + 29 = 185
13, 17, 19, 23, 29 are prime numbers

S2. Ans.(e)
Sol.
Pattern is

121   170   251   372   541   766

   +49   +81   +121   +169   +225

   7^2 9^2 11^2 13^2 15^2

Wrong No. = 543
Right no. = 372 + 169 = 541

S3. Ans.(a)
Sol.
Pattern is

210   70   280   56   336   48

   ÷3   ×4   ÷5   ×6   ÷7

Wrong no. = 49
Right no. = 336 ÷ 7 = 48

S4. Ans.(a)

Sol.
Pattern is

19   140   259   376   491   604

+121   +119   +117   +115   +113
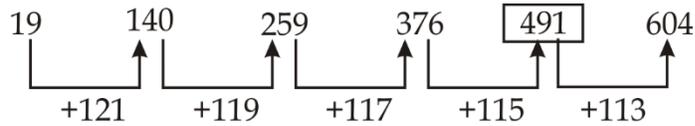
Wrong no = 490
Right no = 376 + 115 = 491

S5. Ans.(a)
Sol.
Pattern is
21 × 1 + 2 = 23
23 × 2 + 3 = 49
49 × 3 + 4 = 151
151 × 4 + 5 = 609
609 × 5 + 6 = 3051
Wrong no = 3053
Right no = 609 × 5 + 6 = 3051

S6. Ans.(d)
Sol.
Given,
$(A + B) = \dfrac{72}{5}$ days
$B + C = \dfrac{72}{7}$ days
ATQ,
$(A + B)8$ days $+ (B + C)4$ days $+ (C)1$ days $=$ Total work
$\dfrac{8 \times 5}{72} + \dfrac{4 \times 7}{72} + \dfrac{1}{C} = 1$
$\dfrac{5}{9} + \dfrac{7}{18} + \dfrac{1}{C} = 1$
$\dfrac{17}{18} + \dfrac{1}{c} = 1$
$\dfrac{1}{c} = 1 - \dfrac{17}{18}$
$\dfrac{1}{c} = \dfrac{1}{18}$
C = 18 days
$B = \dfrac{7}{72} - \dfrac{1}{18}$
$B = \dfrac{7-4}{72}$
B = 24 days
$A = \dfrac{5}{72} - \dfrac{1}{24}$
A = 36 days
Total work = 72 units (LCM of days taken by A, B & C)
Efficiency of A = 2 unit/day
Efficiency of B = 3 units/day

Efficiency of C = 4 units/day

New efficiency of C = $\frac{4}{2}$ = 2 units/day

Required days = $\frac{72}{(2+3+2)} = 10\frac{2}{7}$ days

S7. Ans.(c)

Sol.

Let the efficiency of one man be M unit/day, one woman be W unit/day and that of one child be C unit/day

ATQ,

12 × 10 × M = 15 × 12 × W=20 × 15 × C

⇒2M = 3W = 5C

Total work = 12 × 10 × M = 120M units.

In 5 days, work done by men = (12 × 5 × M) = 60M units.

Remaining work = 60M units

Now 9 women work for 5 days

Work done by them = $\frac{2}{3}M \times 9 \times 5 = 30M\ units$

Remaining work to be done by children = 60M – 30M = 30M units

This work to be done in 5 days

Per day work by children = $\frac{30M}{5} = 6M\ units$

Required children = $\frac{5}{2M} \times 6M = 15$

15 children are required to complete the remaining work in 5 days.

S8. Ans.(e)

Sol.

Juice obtained from first machine is $\frac{90}{100} \times 1000$ gm = 900 gm

900 × 1.05 ml = 945 ml

Pulp remain from Ist machine = 1000 – 900 = 100 gm

Amount of juice obtained from second machine = $\frac{40}{100} \times 100$ = 40gm = 40 × 1.05 ml = 42 ml

Pulp remained from IInd machine = 100 – 40 = 60 gm

Juice obtained by shopkeeper from IIIrd machine

= $\frac{16\frac{2}{3}}{100} \times 60$

= $\frac{50}{300} \times 60$ = 10 gm

Juice obtained = 10 × 1.05 = 10.5 ml

Total juice obtained from 1kg of orange is

= 945 + 42 ml + 10.5 ml

= 997.5 ml

S9. Ans.(b)

Sol.

Let initial speed of Aman is x km/hr.

Distance travelled by him in 2 hours is 2x km.

While distance travelled by Rajiv in these 2 hours is 75 × 2 = 150 km
When both of them meet, Aman had travelled a distance of 108 km.
Distance travelled by Aman with 25% increase in his speed = (108 – 2x) km
And his increased speed = $x(\frac{125}{100})$ = $\frac{5x}{4}$ km/hr
If Aman had travelled 108 km, Rajiv had travelled 192 km.
192 – 150 = 42 km after 2 hours
Time taken by Rajiv to travel 42 km
= $\frac{42}{75}$ = $\frac{14}{25}$ hours
This is equal to time taken by Aman to travel (108 – 2x) km
$\frac{(108-2x)}{\frac{5}{4}x}$ = $\frac{14}{25}$
$108 - 2x = \frac{14 \times 5x}{25 \times 4}$
$108 = \frac{7}{10}x + 2x$
$\frac{27}{10}x = 108 \Rightarrow x = 40$ km/hr.
Therefore increased speed of Aman was
= $\frac{5}{4} \times 40$
= 50 km/hr

S10. Ans.(a)
Sol. Let length of train – A & train – B be 'l_1' & 'l_2' m respectively.
And let speed of train – A & train – B be 'x' & 'y' m/s respectively.
ATQ,
$x+y = \frac{l_1+l_2}{8}$
$8(x+y) = l_1 + l_2$ …(i)
And,
$\frac{l_2}{8.4} = y$
$l_2 = 8.4y$ …(ii)
And,
$\frac{l_1+90}{12} = x$
$l_1 = 12x - 90$ …(iii)
On solving (i), (ii) & (III), we get:
8x + 8y = 12x–90 +8.4y
4x+0.4y = 90   …(iv)
Now,
$x-y = 15 \times \frac{5}{18}$
$\Rightarrow$ 6x-6y=25   …(v)
On solving (iv) & (v), we get:
$y = \frac{50}{3}$ m /s
$x = \frac{125}{6}$ m / s
Put value of y in (ii):

$l_2 = 8.4 \times \frac{50}{3}$

$l_2 = 140$ m

Put value of x in (iii):

$l_1 = 12 \times \frac{125}{6} - 90$

= 160 m

Required ratio = $\frac{160}{140}$

= 8 : 7

S11. Ans.(a)
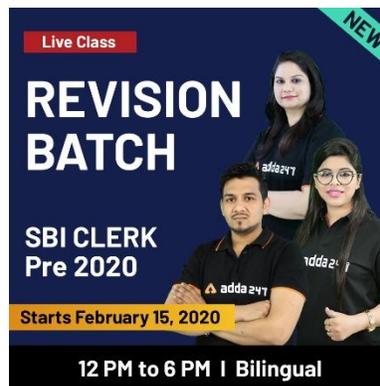
Sol. 1.25 + 1.375 = 2.625

2.625 + 1.25 = 3.875

3.875 + 2.625 = 6.5

6.5 + 3.875 = 10.375

10.375 + 6.5 = 16.875

S12. Ans.(c)

Sol.

Pattern is —

18×4=72,

72 ÷2=36,

36 ×4=144,

144 ÷2=72

72 ×4=288

So wrong number is — 150

S13. Ans.(b)

Sol.

Pattern is —

$25 + (2^2 + 2) = 31$

$31 + (3^2 + 3) = 43$

$43 + (4^2 + 4) = 63$,

$63 + (5^2 + 5) = 93$,

$93 + (6^2 + 6) = 135$

So, wrong number is — 44

S14. Ans.(e)
Sol.
Pattern is —
15+(13×1-1) =27
27+(13×2-2) =51
51+(13×3-3) =87
87+(13×4-4) =135
135+(13×5-5) =195
Wrong number is 196

S15. Ans.(a)
Sol. $47+3^2=56$
   $56+5^2=81$
    $81+7^2=130$
    $130+9^2=211$
    $211+11^2=332$
Wrong number is 57

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