|  |
| --- |
| 1>The product of two numbers is 4375 and the quotient, when the larger one is divided by the smaller, is 7. The sum of the numbers is: |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 380 | [**B.**](javascript:%20void%200;) | 395 | | [**C.**](javascript:%20void%200;) | 200 | [**D.**](javascript:%20void%200;) | 425 | |

**Answer:** Option **C**

**Explanation:**

Let the numbers be  *x*  and  *y*.

|  |  |  |
| --- | --- | --- |
| Then, *xy* = 4375 and | *x* | = 7. |
| *y* |

|  |  |  |
| --- | --- | --- |
| *xy* | = | 4375 |
| (*x*/*y*) | 7 |

http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *y*2 = 625.

http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *y* = 25.

http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* = 7*y* = (7 x 25) = 175.

* Sum of the numbers = *x* + *y* = 175 + 25 = 200.

|  |  |  |  |
| --- | --- | --- | --- |
| **2>** | If the sum of two numbers is 55 and the sum of their squares is 1525, then the product of the numbers is | | |
|  | A.600 | B.750 |  |
|  | C.800 | D.880 |  |

|  |
| --- |
| **Answer:** Option **C**  **Explanation:** |
| |  |  |  | | --- | --- | --- | | Let the numbers be x and y. | | | | Then, (x+y) | = 55 |  | | and x2+y2 | = 1525. |  | | Now, 2xy= (x+y)2 - (x2+y2) |  |  | | = (55)2 - 1525 |  | | = 3025 - 1525 |  | | = 1500 |  | |  |  |  | |

3>The difference between a two-digit number and the number obtained by interchanging the positions of its digits is 18. What is the difference between the two digits of that number?

A.2 B.5

C.1 D.none of these

|  |
| --- |
| Let the ten's digit be x and unit's digit be y. |
| Then, (10x+y) - (10y+x) = 18. |
| **‹=›** 9(x - y) = 18 |
| **‹=› x - y = 2**.  4>The sum of two numbers is 80 and their product is 1575. What will be the sum of their reciprocals?   |  |  | | --- | --- | | [**A.  1/40**](http://www.a2zinterviews.com/Aptitude/problems-on-numbers/problems-on-numbers_3.php#t1) | [**B.  8/75**](http://www.a2zinterviews.com/Aptitude/problems-on-numbers/problems-on-numbers_3.php#t1) | | **C.  16/315** | **D.17/315** |  | |

|  |  |  |
| --- | --- | --- |
| Let the numbers be x and y. | | |
| Then, x + y = 80and xy = 1575. |  |  |
| Therefore, 1/x + 1/y |  |  |
| **‹=›** x + y / xy. |  |  |
| **‹=›** 80/1575. |  |  |
| **= 16 / 315.** |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **.** | 5>Find a number such that when 20 is subtracted from 5 times the number, the     |  |  |  | | --- | --- | --- | |  | [**A.  1**](http://www.a2zinterviews.com/Aptitude/problems-on-numbers/problems-on-numbers_3.php#t1)**6** | [**B. 18**](http://www.a2zinterviews.com/Aptitude/problems-on-numbers/problems-on-numbers_3.php#t1) | |  | [**C.  25**](http://www.a2zinterviews.com/Aptitude/problems-on-numbers/problems-on-numbers_3.php#t1) | [**D.**](http://www.a2zinterviews.com/Aptitude/problems-on-numbers/problems-on-numbers_3.php#t1)**17** | |

|  |  |  |
| --- | --- | --- |
| Let the numbers be x . | | |
| Then, 5x - 20 = 2x + 18 |  |  |
| **‹=›**3x = 48 |  |  |
| **‹=›** x = 16. |  |  |

|  |
| --- |
| 6>A two-digit number is such that the product of the digits is 15. When 18 is added to the number, then the digits are reversed. The number is: |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 18 | [**B.**](javascript:%20void%200;) | 24 | | [**C.**](javascript:%20void%200;) | 42 | [**D.**](javascript:%20void%200;) | 35 |  |  |  |  | | --- | --- | --- | | Let the ten's and unit digit be *x* and | 15 | respectively. | | *x* |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Then, | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 10*x* + | 15 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | + 18 = 10 x | 15 | + *x* | | *x* | *X* |   http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 10*x*2 + 15 + 18*x* = 150 + *x*2  http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 9*x*2 + 18*x* - 135 = 0  http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x*2 + 2*x* - 15 = 0  http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif (*x* + 5)(*x* - 3) = 0  *x* = 3. |
| 7>The sum of the digits of a two-digit number is 15 and the difference between the digits is 3. What is the two-digit number? |
| |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 69 | [**B.**](javascript:%20void%200;) | 78 | | [**C.**](javascript:%20void%200;) | 96 | [**D.**](javascript:%20void%200;) | 96 | | [**E.**](javascript:%20void%200;) | None of these |  |  |   Let the ten's digit be *x* and unit's digit be *y*.  Then, *x* + *y* = 15 and *x* - *y* = 3   .  Solving *x* + *y* = 15   and   *x* - *y* = 3, we get: *x* = 9, *y* = 6.  So, the number is either 96 or 69.   |  | | --- | | 8>The sum of first 15\*3 natural numbers is: | | |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 1035 | [**B.**](javascript:%20void%200;) | 2645 | | [**C.**](javascript:%20void%200;) | 2590 | [**D.**](javascript:%20void%200;) | 1305 |   Let Sn =(1 + 2 + 3 + ... + 45). This is an A.P. in which a =1, d =1, n = 45.   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Sn = | n | [2*a* + (*n* - 1)*d*] | = | 45 | x [2 x 1 + (45 - 1) x 1] | = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 45 | x 46 | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = (45 x 23) | | 2 | 2 | 2 |   = 45 x (20 + 3)  = 45 x 20 + 45 x 3  = 900 + 135  = 1035.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |   9>How many keystrokes are needed to type numbers from 1 to 1000?   1. 3001 2. 2893 3. 2704 4. 2890   **Explanatory Answer**  While typing numbers from 1 to 1000, you have 9 single digit numbers from 1 to 9. Each of them require one keystroke. That is 9 key strokes.  There are 90 two-digit numbers, from 10 to 99. Each of these numbers require 2 keystrokes. Therefore, one requires 180 keystrokes to type the 2 digit numbers.  There are 900 three-digit numbers, from 100 to 999. Each of these numbers require 3 keystrokes. Therefore, one requires 2700 keystrokes to type these 3 digit numbers.  Then 1000 is a four-digit number which requires 4 keystrokes.  Totally, therefore, one requires 9 + 180 + 2700 + 4 = 2893 keystrokes.  10>What number should be subtracted from x3 + 4x2 - 7x + 21 if it is to be perfectly divisible by x + 3?   1. 42 2. 39 3. 13 4. None of these   Correct Choice is **(1)** and Correct Answer is **42**  **Explanatory Answer**  According to remainder theorem when polynomial division math, then the remainder is f(-a).  In this case, as x + 3 divides x3 + 4x2 - 7x + 21 - k perfectly (k being the number to be subtracted), the remainder is 0 when the value of x is substituted by -3.  i.e., (-3)3 + 4(-3)2 - 7(-3) + 21 - k = 0  or -27 + 36 + 21 + 21 = k  or k = 51  11>What is the minimum number of square tiles required to tile a floor of length 6 metres 78 cm and width 3 metres 74 cm?   1. 63393 2. 18750 3. 54043 4. 74843     **Explanatory Answer**  The tiles used to tile the floor are square tiles. Therefore, the length of the tiles = width of the tiles. As we have to use whole number of tiles, the side of the square should a factor of both 5 m 78 cm and 3m 74. And it should be the highest factor of 6 m 78 cm and 3m 74.  6m 78 cm = 678 cm and 3 m 74 cm = 374 cm. The HCF of 678 and 374 = 2.  Hence, the side of the square is 2.  The number of such square tiles required = (678\*374)/(2\*2) = 63393 tiles.   |  |  | | --- | --- | |  | **TIME AND DISTANCE**  1>In covering a distance of 50 km, A takes 2 hours more than S. If A doubles his speed, then he would take 1 hour less than S. A's speed is: | | |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 8.33 kmph | [**B.**](javascript:%20void%200;) | 6 kmph | | [**C.**](javascript:%20void%200;) | 6.25 kmph | [**D.**](javascript:%20void%200;) | 7.5 kmph | |   Let A's speed be *x* km/hr.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Then, | 50 | - | 50 | = 3 | | *x* | 2*x* |   http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 3*x* = 25/3  http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* =8.33.   |  | | --- | | 2>A car can travel 50% faster than a train. Both start from point A at the same time and reach point B 75 kms away from A at the same time. On the way, however, the car lost about 10.0 minutes while stopping for lunch. The speed of the train is: | | |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 130 kmph | [**B.**](javascript:%20void%200;) | 100 kmph | | [**C.**](javascript:%20void%200;) | 120 kmph | [**D.**](javascript:%20void%200;) | 150 kmph |   Let speed of the car be *x* kmph.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Then, speed of the train = | 150 | *x* | = | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 3 | *x* | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifkmph. | | 100 | 2 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif | 75 | - | 75 | = | 100 | | *x* | (3/2)*x* | 10 x 60 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif | 75 | - | 50 | = | 1 | | *x* | *x* | 06 |  |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  | | X=25\*06 =150   |  | | --- | | 3>A person travelled a distance of 60 km in 9 hours. He travelled partly on foot at 5 km/hr and partly on bicycle at 10 km/hr. The distance travelled on foot is: | | |  |  |  |  | | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | 25 km | [**B.**](javascript:%20void%200;) | 28 km | | [**C.**](javascript:%20void%200;) | 29 km | [**D.**](javascript:%20void%200;) | 26 km |   Let the distance travelled on foot be *x* km.  Then, distance travelled on bicycle = (60 -*x*) km.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | So, | *x* | + | (61 -*x*) | = 9 | | 5 | 10 |   http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 2*x* + (61 -*x*) = 9 x 10  http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* = 29 km. | |  |  |  |  | | |

4>A train traveling at 70 kmph crosses a platform in 20 seconds and a man standing on the platform in 18 seconds. What is the length of the platform in meters?

1. 240/6 meters
2. 360/7 meters
3. 350/9 meters
4. 600 meters

When the train crosses a man standing on a platform, the distance covered by the train is equal to the length of the train.  
  
However, when the same train crosses a platform, the distance covered by the train is equal to the length of the train plus the length of the platform.  
  
The extra time that the train takes when crossing the platform is on account of the extra distance that it has to cover = length of the platform.  
  
Therefore, length of the platform = speed of train \* extra time taken to cross the platform  
  
Length of platform = 70 kmph \* 2 seconds  
  
Converting 70 kmph into m/sec, we get 72 kmph = (5/18)\*70 = 175/9 m/sec  
  
Therefore, length of the platform = (175/9)\*2 = 350/9 meters.