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| 1. What least number must be added to 1056, so that the sum is completely divisible by 23 ? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 2 | | [**B.**](javascript:%20void%200;) | 3 | | [**C.**](javascript:%20void%200;) | 18 | | [**D.**](javascript:%20void%200;) | 21 | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **A**  **Explanation:**  23) 1056 (45  92  ---  136  115  ---  21  ---    Required number = (23 - 21)  = 2. |

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| 2) (935421 x 625) = ? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 575648125 | | [**B.**](javascript:%20void%200;) | 584638125 | | [**C.**](javascript:%20void%200;) | 584649125 | | [**D.**](javascript:%20void%200;) | 585628125 |   **Answer:** Option **B**  **Explanation:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | 935421 x 625 = 935421 x 54 = 935421 x | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 10 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | 4 | | 2 |  |  |  |  |  | | --- | --- | --- | --- | | = | 935421 x 104 | = | 9354210000 | | 24 | 16 |   = 584638125 |

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| 3)On dividing a number by 357, we get 39 as remainder. On dividing the same number 17, what will be the remainder ? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 0 | | [**B.**](javascript:%20void%200;) | 3 | | [**C.**](javascript:%20void%200;) | 5 | | [**D.**](javascript:%20void%200;) | 11 |   **Answer:** Option **C**  **Explanation:**  Let *x* be the number and *y* be the quotient. Then,  *x* = 357 x *y* + 39    = (17 x 21 x *y*) + (17 x 2) + 5    = 17 x (21*y* + 2) + 5)  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gifRequired remainder = 5. |

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| 4) In dividing a number by 585, a student employed the method of short division. He divided the number successively by 5, 9 and 13 (factors 585) and got the remainders 4, 8, 12 respectively. If he had divided the number by 585, the remainder would have been |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 24 | | [**B.**](javascript:%20void%200;) | 144 | | [**C.**](javascript:%20void%200;) | 292 | | [**D.**](javascript:%20void%200;) | 584 |   **Answer:** Option **D**  **Explanation:**  5 | *x* *z* = 13 x 1 + 12 = 25  --------------  9 | *y* - 4 *y* = 9 x *z* + 8 = 9 x 25 + 8 = 233  --------------  13| *z* - 8 *x* = 5 x *y* + 4 = 5 x 233 + 4 = 1169  --------------  | 1 -12    585) 1169 (1  585  ---  584  ---    Therefore, on dividing the number by 585, remainder = 584. |

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| 5) What smallest number should be added to 4456 so that the sum is completely divisible by 6 ? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 4 | | [**B.**](javascript:%20void%200;) | 3 | | [**C.**](javascript:%20void%200;) | 2 | | [**D.**](javascript:%20void%200;) | 1 | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **C**  **Explanation:**  6) 4456 (742  42  ---  25  24 Therefore, Required number = (6 - 4) = 2.  ---  16  12  ---  4 |

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| 6) What least number must be subtracted from 13601, so that the remainder is divisible by 87 ? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 23 | | [**B.**](javascript:%20void%200;) | 31 | | [**C.**](javascript:%20void%200;) | 29 | | [**D.**](javascript:%20void%200;) | 37 | | [**E.**](javascript:%20void%200;) | 49 |   **Answer:** Option **C**  **Explanation:**  87) 13601 (156  87  ----  490  435  ----  551  522  ---  29  ---    Therefore, the required number = 29. |

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| 7) A can lay railway track between two given stations in 16 days and B can do the same job in 12 days. With help of C, they did the job in 4 days only. Then, C alone can do the job in: |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 9 | 1 | days | | 5 | | | [**B.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 9 | 2 | days | | 5 | | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 9 | 3 | days | | 5 | | | [**D.**](javascript:%20void%200;) | 10 |   **Answer:** Option **C**  **Explanation:**   |  |  |  | | --- | --- | --- | | (A + B + C)'s 1 day's work = | 1 | , | | 4 |  |  |  |  | | --- | --- | --- | | A's 1 day's work = | 1 | , | | 16 |  |  |  |  | | --- | --- | --- | | B's 1 day's work = | 1 | . | | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Therefore C's 1 day's work = | 1 | - | ( | 1 | + | 1 | ) | = | ( | 1 | - | 7 | ) | = | 5 | . | | 4 | 16 | 12 | 4 | 48 | 48 |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | So, C alone can do the work in | 48 | = 9 | 3 | days. | | 5 | 5 | |

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| A is 30% more efficient than B. How much time will they, working together, take to complete a job which A alone could have done in 23 days? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 11 days | | [**B.**](javascript:%20void%200;) | 13 days | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 20 | 3 | days | | 17 | | | [**D.**](javascript:%20void%200;) | None of these |   **Answer:** Option **B**  **Explanation:**  Ratio of times taken by A and B = 100 : 130 = 10 : 13.  Suppose B takes *x* days to do the work.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Then, 10 : 13 :: 23 : *x*     =>     *x* = | ( | 23 x 13 | ) | =>     *x* = | 299 | . | | 10 | 10 |  |  |  |  | | --- | --- | --- | | A's 1 day's work = | 1 | ; | | 23 |  |  |  |  | | --- | --- | --- | | B's 1 day's work = | 10 | . | | 299 |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | (A + B)'s 1 day's work = | ( | 1 | + | 10 | ) | = | 23 | = | 1 | . | | 23 | 299 | 299 | 13 |   Therefore, A and B together can complete the work in 13 days. |

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| A, B and C can complete a piece of work in 24, 6 and 12 days respectively. Working together, they will complete the same work in: |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | [**A.**](javascript:%20void%200;) | |  |  | | --- | --- | | 1 | day | | 24 | | | [**B.**](javascript:%20void%200;) | |  |  | | --- | --- | | 7 | day | | 24 | | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 3 | 3 | days | | 7 | | | [**D.**](javascript:%20void%200;) | 4 days |   **Answer:** Option **C**  **Explanation:**   |  |  |  | | --- | --- | --- | | **Formula:** If A can do a piece of work in *n* days, then A's 1 day's work = | 1 | . | | *n* |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | (A + B + C)'s 1 day's work = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 | + | 1 | + | 1 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = | 7 | . | | 24 | 6 | 12 | 24 |  |  |  |  |  | | --- | --- | --- | --- | | **Formula:** If A's 1 day's work = | 1 | , | then A can finish the work in *n* days. | | *n* |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | So, all the three together will complete the job in | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 24 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif days | = | 3 | 3 | days. | | 7 | 7 | |

[**Directions to Solve**](javascript:%20void%200;)

Each of the questions given below consists of a question followed by three statements. You have to study the question and the statements and decide which of the statement(s) is/are necessary to answer the question.

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| |  |  | | --- | --- | | How many workers are required for completing the construction work in 10 days? | | | I. | 20% of the work can be completed by 8 workers in 8 days. | | II. | 20 workers can complete the work in 16 days. | | III. | One-eighth of the work can be completed by 8 workers in 5 days. | |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | I only | | [**B.**](javascript:%20void%200;) | II and III only | | [**C.**](javascript:%20void%200;) | III only | | [**D.**](javascript:%20void%200;) | I and III only | | [**E.**](javascript:%20void%200;) | Any one of the three |   **Answer:** Option **E**  **Explanation:**   |  |  |  | | --- | --- | --- | | **I.** | 20 | work can be completed by (8 x 8) workers in 1 day. | | 100 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif Whole work can be completed by (8 x 8 x 5) workers in 1 day.   |  |  |  | | --- | --- | --- | | = | 8 x 8 x 5 | workers in 10 days = 32 workers in 10 days. | | 10 |     **II.** (20 x 16) workers can finish it in 1 day.   |  |  |  | | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif | (20 x 16) | workers can finish it in 10 days. | | 10 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 32 workers can finish it in 10 days.   |  |  |  | | --- | --- | --- | | **III.** | 1 | work can be completed by (8 x 5) workers in 1 day. | | 8 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif Whole work can be completed by (8 x 5 x 8) workers in 1 day.   |  |  |  | | --- | --- | --- | | = | 8 x 5 x 8 | workers in 10 days = 32 workers in 10 days. | | 10 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Any one of the three gives the answer.  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Correct answer is (E). |

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| 8) 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 35 | | [**B.**](javascript:%20void%200;) | 40 | | [**C.**](javascript:%20void%200;) | 45 | | [**D.**](javascript:%20void%200;) | 50 |   **Answer:** Option **B**  **Explanation:**  Let 1 man's 1 day's work = *x* and 1 woman's 1 day's work = *y*.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Then, 4*x* + 6*y* = | 1 | and 3*x* + 7*y* = | 1 | . | | 8 | 10 |  |  |  |  |  | | --- | --- | --- | --- | | Solving the two equations, we get: *x* = | 11 | , *y* = | 1 | | 400 | 400 |  |  |  |  | | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif 1 woman's 1 day's work = | 1 | . | | 400 |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 10 women's 1 day's work = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 | x 10 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = | 1 | . | | 400 | 40 |   Hence, 10 women will complete the work in 40 days. |

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| 9)Two, trains, one from Howrah to Patna and the other from Patna to Howrah, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 2 : 3 | | [**B.**](javascript:%20void%200;) | 4 : 3 | | [**C.**](javascript:%20void%200;) | 6 : 7 | | [**D.**](javascript:%20void%200;) | 9 : 16 |   **Answer:** Option **B**  **Explanation:**  Let us name the trains as A and B. Then,  (A's speed) : (B's speed) = b : a = 16 : 9 = 4 : 3. |

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| 10) Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 1 : 3 | | [**B.**](javascript:%20void%200;) | 3 : 2 | | [**C.**](javascript:%20void%200;) | 3 : 4 | | [**D.**](javascript:%20void%200;) | None of these | |

**Answer:** Option **B**

**Explanation:**

Let the speeds of the two trains be *x* m/sec and y m/sec respectively.

Then, length of the first train = 27*x* metres,

and length of the second train = 17*y* metres.

|  |  |  |
| --- | --- | --- |
| https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif | 27*x* + 17*y* | = 23 |
| *x*+ *y* |

https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 27*x* + 17*y* = 23*x* + 23*y*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 4*x* = 6*y*  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif | *x* | = | 3 | . |
| *y* | 2 |

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| 11) Two trains are moving in opposite directions @ 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 36 | | [**B.**](javascript:%20void%200;) | 45 | | [**C.**](javascript:%20void%200;) | 48 | | [**D.**](javascript:%20void%200;) | 49 |   **Answer:** Option **C**  **Explanation:**  Relative speed = (60+ 90) km/hr   |  |  |  |  |  | | --- | --- | --- | --- | --- | | = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 150 x | 5 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifm/sec | | 18 |  |  |  |  |  | | --- | --- | --- | --- | | = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 125 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifm/sec. | | 3 |   Distance covered = (1.10 + 0.9) km = 2 km = 2000 m.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Required time = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 2000 x | 3 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifsec = 48 sec. | | 125 | |

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| A train 108 m long moving at a speed of 50 km/hr crosses a train 112 m long coming from opposite direction in 6 seconds. The speed of the second train is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 48 km/hr | | [**B.**](javascript:%20void%200;) | 54 km/hr | | [**C.**](javascript:%20void%200;) | 66 km/hr | | [**D.**](javascript:%20void%200;) | 82 km/hr |   **Answer:** Option **D**  **Explanation:**  Let the speed of the second train be *x* km/hr.   |  |  | | --- | --- | | Relative speed | = (*x* + 50) km/hr | |  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | = |  | (*x* + 50) x | 5 |  | m/sec | | 18 | | |  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | = |  | 250 + 5*x* |  | m/sec. | | 18 | |   Distance covered = (108 + 112) = 220 m.   |  |  |  | | --- | --- | --- | | Therefore | 220 | = 6 | | |  |  |  | | --- | --- | --- | | ( | 250 + 5*x* | ( | | 18 | |   => 250 + 5*x* = 660  => *x* = 82 km/hr. |

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| 12) Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Rs. 6400 | | [**B.**](javascript:%20void%200;) | Rs. 6500 | | [**C.**](javascript:%20void%200;) | Rs. 7200 | | [**D.**](javascript:%20void%200;) | Rs. 7500 | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **A**  **Explanation:**  Let the sum invested in Scheme A be Rs. *x* and that in Scheme B be Rs. (13900 - *x*).   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Then, | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | *x* x 14 x 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | + | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | (13900 - *x*) x 11 x 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = 3508 | | 100 | 100 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 28*x* - 22*x* = 350800 - (13900 x 22)  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 6*x* = 45000  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* = 7500.  So, sum invested in Scheme B = Rs. (13900 - 7500) = Rs. 6400. |

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| 13) A lent Rs. 5000 to B for 2 years and Rs. 3000 to C for 4 years on simple interest at the same rate of interest and received Rs. 2200 in all from both of them as interest. The rate of interest per annum is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 5% | | [**B.**](javascript:%20void%200;) | 7% | | [**C.**](javascript:%20void%200;) | |  |  |  | | --- | --- | --- | | 7 | 1 | % | | 8 | | | [**D.**](javascript:%20void%200;) | 10% |   **Answer:** Option **D**  **Explanation:**  Let the rate be R% p.a.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Then, | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 5000 x R x 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | + | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 3000 x R x 4 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = 2200. | | 100 | 100 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 100R + 120R = 2200   |  |  |  |  |  | | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif R = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 2200 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = 10. | | 220 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Rate = 10%. |

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| 14) | A man took loan from a bank at the rate of 12% p.a. simple interest. After 3 years he had to pay Rs. 5400 interest only for the period. The principal amount borrowed by him was: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Rs. 2000 | | [**B.**](javascript:%20void%200;) | Rs. 10,000 | | [**C.**](javascript:%20void%200;) | Rs. 15,000 | | [**D.**](javascript:%20void%200;) | Rs. 20,000 |   **Answer:** Option **C**  **Explanation:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Principal = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 100 x 5400 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 15000. | | 12\*3 | |

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| 15) A sum of money amounts to Rs. 9800 after 5 years and Rs. 12005 after 8 years at the same rate of simple interest. The rate of interest per annum is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 5% | | [**B.**](javascript:%20void%200;) | 8% | | [**C.**](javascript:%20void%200;) | 12% | | [**D.**](javascript:%20void%200;) | 15% |   **Answer:** Option **C**  **Explanation:**  S.I. for 3 years = Rs. (12005 - 9800) = Rs. 2205.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | S.I. for 5 years = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 2205 | x 5 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 3675 | | 3 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Principal = Rs. (9800 - 3675) = Rs. 6125.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Hence, rate = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 100 x 3675 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif% | = 12% | | 6125 x 5 | |

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| 16) A person borrows Rs. 5000 for 2 years at 4% p.a. simple interest. He immediately lends it to another person at 6https://www.indiabix.com/_files/images/aptitude/1-div-1by4.gif p.a for 2 years. Find his gain in the transaction per year. |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Rs. 112.50 | | [**B.**](javascript:%20void%200;) | Rs. 125 | | [**C.**](javascript:%20void%200;) | Rs. 150 | | [**D.**](javascript:%20void%200;) | Rs. 167.50 |   **Answer:** Option **A**  **Explanation:**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Gain in 2 years | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-obracket-h1.gif | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 5000 x | 25 | x | 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | - | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 5000 x 4 x 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | https://www.indiabix.com/_files/images/aptitude/1-sym-cbracket-h1.gif | | 4 | 100 | 100 | | |  | = Rs. (625 - 400) | |  | = Rs. 225. |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Gain in 1 year = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 225 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 112.50 | | 2 | |

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| 17) An automobile financier claims to be lending money at simple interest, but he includes the interest every six months for calculating the principal. If he is charging an interest of 10%, the effective rate of interest becomes: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 10% | | [**B.**](javascript:%20void%200;) | 10.25% | | [**C.**](javascript:%20void%200;) | 10.5% | | [**D.**](javascript:%20void%200;) | None of these |   **Answer:** Option **B**  **Explanation:**  Let the sum be Rs. 100. Then,   |  |  |  |  |  | | --- | --- | --- | --- | --- | | S.I. for first 6 months = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 100 x 10 x 1 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 5 | | 100 x 2 |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | S.I. for last 6 months = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 105 x 10 x 1 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 5.25 | | 100 x 2 |   So, amount at the end of 1 year = Rs. (100 + 5 + 5.25) = Rs. 110.25  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Effective rate = (110.25 - 100) = 10.25% |

18)

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| Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 24 | | [**B.**](javascript:%20void%200;) | 27 | | [**C.**](javascript:%20void%200;) | 40 | | [**D.**](javascript:%20void%200;) | Cannot be determined | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **A**  **Explanation:**  Let the present ages of Sameer and Anand be 5*x* years and 4*x* years respectively.   |  |  |  |  | | --- | --- | --- | --- | | Then, | 5*x* + 3 | = | 11 | | 4*x* + 3 | 9 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 9(5*x* + 3) = 11(4*x* + 3)  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 45*x* + 27 = 44*x* + 33  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 45*x* - 44*x* = 33 - 27  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* = 6.  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Anand's present age = 4*x* = 24 years. |

19)

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| A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of his son is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 14 years | | [**B.**](javascript:%20void%200;) | 18 years | | [**C.**](javascript:%20void%200;) | 20 years | | [**D.**](javascript:%20void%200;) | 22 years |   **Answer:** Option **D**  **Explanation:**  Let the son's present age be *x* years. Then, man's present age = (*x* + 24) years.  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif (*x* + 24) + 2 = 2(*x* + 2)  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* + 26 = 2*x* + 4  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* = 22. |

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| 20) Six years ago, the ratio of the ages of Kunal and Sagar was 6 : 5. Four years hence, the ratio of their ages will be 11 : 10. What is Sagar's age at present? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 16 years | | [**B.**](javascript:%20void%200;) | 18 years | | [**C.**](javascript:%20void%200;) | 20 years | | [**D.**](javascript:%20void%200;) | Cannot be determined | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **A**  **Explanation:**  Let the ages of Kunal and Sagar 6 years ago be 6*x* and 5*x* years respectively.   |  |  |  |  | | --- | --- | --- | --- | | Then, | (6*x* + 6) + 4 | = | 11 | | (5*x* + 6) + 4 | 10 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 10(6*x* + 10) = 11(5*x* + 10)  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 5*x* = 10  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* = 2.   * Sagar's present age = (5*x* + 6) = 16 years.   21)   |  | | --- | | At present, the ratio between the ages of Arun and Deepak is 4 : 3. After 6 years, Arun's age will be 26 years. What is the age of Deepak at present ? | | |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 12 years | | [**B.**](javascript:%20void%200;) | 15 years | | [**C.**](javascript:%20void%200;) | 19 and half | | [**D.**](javascript:%20void%200;) | 21 years |   **Answer:** Option **B**  **Explanation:**  Let the present ages of Arun and Deepak be 4*x* years and 3*x* years respectively. Then,  4*x* + 6 = 26    https://www.indiabix.com/_files/images/aptitude/1-sym-bim.gif    4*x* = 20  *x* = 5.  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Deepak's age = 3*x* = 15 years. | |

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| 22) Q is as much younger than R as he is older than T. If the sum of the ages of R and T is 50 years, what is definitely the difference between R and Q's age? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 1 year | | [**B.**](javascript:%20void%200;) | 2 years | | [**C.**](javascript:%20void%200;) | 25 years | | [**D.**](javascript:%20void%200;) | Data inadequate | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **D**  **Explanation:**  **Given that:**  1. The difference of age b/w R and Q = The difference of age b/w Q and T.  2. Sum of age of R and T is 50 i.e. (R + T) = 50.  **Question: R - Q = ?.**  Explanation:  R - Q = Q - T  (R + T) = 2Q  Now given that, (R + T) = 50  So, 50 = 2Q and therefore Q = 25.  Question is (R - Q) = ?  Here we know the value(age) of Q (25), but we don't know the age of R.  Therefore, (R-Q) cannot be determined. |

23)

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| A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going, in 10 seconds. The speed of the train is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 45 km/hr | | [**B.**](javascript:%20void%200;) | 50 km/hr | | [**C.**](javascript:%20void%200;) | 54 km/hr | | [**D.**](javascript:%20void%200;) | 55 km/hr |   **Answer:** Option **B**  **Explanation:**   |  |  |  |  | | --- | --- | --- | --- | | Speed of the train relative to man = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 125 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifm/sec | | 10 |  |  |  |  |  | | --- | --- | --- | --- | | = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 25 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifm/sec. | | 2 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 25 | x | 18 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifkm/hr | | 2 | 5 |      = 45 km/hr.  Let the speed of the train be *x* km/hr. Then, relative speed = (*x* - 5) km/hr.  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif *x* - 5 = 45     https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif     *x* = 50 km/hr. |

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| Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 1 : 3 | | [**B.**](javascript:%20void%200;) | 3 : 2 | | [**C.**](javascript:%20void%200;) | 3 : 4 | | [**D.**](javascript:%20void%200;) | None of these |   **Answer:** Option **B**  **Explanation:**  Let the speeds of the two trains be *x* m/sec and y m/sec respectively.  Then, length of the first train = 27*x* metres,  and length of the second train = 17*y* metres.   |  |  |  | | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif | 27*x* + 17*y* | = 23 | | *x*+ *y* |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 27*x* + 17*y* = 23*x* + 23*y*  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 4*x* = 6*y*   |  |  |  |  |  | | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif | *x* | = | 3 | . | | *y* | 2 | |

25)

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| Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 3.6 | | [**B.**](javascript:%20void%200;) | 6 | | [**C.**](javascript:%20void%200;) | 18 | | [**D.**](javascript:%20void%200;) | Cannot be determined | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **B**  **Explanation:**  Let rate = R% and time = R years.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Then, | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1200 x R x R | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = 432 | | 100 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 12R2 = 432  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif R2 = 36  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif R = 6. |

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| It is being given that (232 + 1) is completely divisible by a whole number. Which of the following numbers is completely divisible by this number? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | (216 + 1) | | [**B.**](javascript:%20void%200;) | (216 - 1) | | [**C.**](javascript:%20void%200;) | (7 x 223) | | [**D.**](javascript:%20void%200;) | (296 + 1) |   **Answer:** Option **D**  **Explanation:**  Let 232 = *x*. Then, (232 + 1) = (*x* + 1).  Let (*x* + 1) be completely divisible by the natural number N. Then,  (296 + 1) = [(232)3 + 1] = (*x*3 + 1) = (*x* + 1)(*x*2 - *x* + 1), which is completely divisible by N, since (*x* + 1) is divisible by N. |

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| Which of the following is a prime number ? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 33 | | [**B.**](javascript:%20void%200;) | 81 | | [**C.**](javascript:%20void%200;) | 93 | | [**D.**](javascript:%20void%200;) | 97 |   **Answer:** Option **D**  **Explanation:**  Clearly, 97 is a prime number. |

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| How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 3.5 years | | [**B.**](javascript:%20void%200;) | 4 years | | [**C.**](javascript:%20void%200;) | 4.5 years | | [**D.**](javascript:%20void%200;) | 5 years |   **Answer:** Option **B**  **Explanation:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Time = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 100 x 81 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifyears | = 4 years. | | 450 x 4.5 | |

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| A sum of money amounts to Rs. 9800 after 5 years and Rs. 12005 after 8 years at the same rate of simple interest. The rate of interest per annum is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 5% | | [**B.**](javascript:%20void%200;) | 8% | | [**C.**](javascript:%20void%200;) | 12% | | [**D.**](javascript:%20void%200;) | 15% |   **Answer:** Option **C**  **Explanation:**  S.I. for 3 years = Rs. (12005 - 9800) = Rs. 2205.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | S.I. for 5 years = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 2205 | x 5 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 3675 | | 3 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Principal = Rs. (9800 - 3675) = Rs. 6125.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Hence, rate = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 100 x 3675 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif% | = 12% | | 6125 x 5 | |

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| A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Rs. 375 | | [**B.**](javascript:%20void%200;) | Rs. 400 | | [**C.**](javascript:%20void%200;) | Rs. 600 | | [**D.**](javascript:%20void%200;) | Rs. 800 |   **Answer:** Option **B**  **Explanation:**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | C's 1 day's work = | 1 | - | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 | + | 1 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = | 1 | - | 7 | = | 1 | . | | 3 | 6 | 8 | 3 | 24 | 24 |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | A's wages : B's wages : C's wages = | 1 | : | 1 | : | 1 | = 4 : 3 : 1. | | 6 | 8 | 24 |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gifC's share (for 3 days) = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 3 x | 1 | x 3200 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 400. | |  | |