**GMAT Problem Solving Test Paper-1**

On a certain day, 18 percent of the male employees on a police force were on duty. If 180 employees were on duty that day and half of these were male employees, how many male employees were on the police force?

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|  | A. 90 |
|  | B. 180 |
|  | C. 270 |
|  | D. 500 |
|  | E. 1,000 |

Out of his annual net income, Adam spent 25 percent for food, 13.5 percent for entertainment, 20 percent for housing, 8 percent for car expenses, 15 percent for clothing, and saved the rest. What was the ratio of the amount saved to the amount spent for entertainment?

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|  | A. \cfrac {19}{27} |
|  | B. \cfrac {6}{5} |
|  | C. \cfrac {37}{27} |
|  | D. \cfrac {19}{9} |
|  | E. \cfrac {7}{3} |

The population of town A increased from 325,000 in 1960 to 350,000 in 1970, and it is projected that the population will increase by the same number from 1990 to 2000. Approximately what is the projected percent increase in population from 1970 to 1980 ?

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|  | A. 7.1% |
|  | B. 7.7% |
|  | C. 8.3% |
|  | D. 14.3% |
|  | E. 15.3% |

A library contains science books , out of which 50 are on botany, 65 are on zoology, 90 are on physics. 50 are on geology, and 110 are on chemistry. If science books are removed randomly from the library, how many must be removed to ensure that 80 of the books removed are on the same science?

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|  | A. 81 |
|  | B. 159 |
|  | C. 166 |
|  | D. 285 |
|  | E. 324 |

A certain shade of brown paint is obtained by mixing 3 parts of green paint with 5 parts of black paint. If 2 gallons of the mixture is needed and the individual colors can be purchased only in one-gallon or half- gallon cans, what is the least amount of paint, in gallons, that must be purchased in order to measure out the portions needed for the mixture?

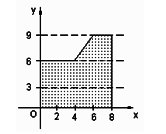
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|  | A. 2 |
|  | B. 2 \frac {1}{2} |
|  | C. 3 |
|  | D. 3 \frac {1}{2} |
|  | E. 4 |

Cheryl saves $35 each week. If she now has $100 saved, in how many weeks can she first have enough saved to buy a lawn mower that costs $250?

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|  | A. 2 |
|  | B. 3 |
|  | C. 4 |
|  | D. 5 |
|  | E. 6 |

In maths exam, 3 students each had a score of 90, 9 students each had a score of 80, 4 students each had a score of 70, and 4 students each had a score of 60. What was the average (arithmetic mean) score for the 20 students?

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|  | A. 70.5 |
|  | B. 75.0 |
|  | C. 75.5 |
|  | D. 80.0 |
|  | E. 80.5 |



What is the area of the shaded region in the figure above ?

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|  | A. 72 |
|  | B. 57 |
|  | C. 55 |
|  | D. 54 \frac {1}{2} |
|  | E. 49 \frac {1}{2} |

If the sum of two integers is 6, then it must be true that

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|  | A. Both integers are even |
|  | B. Both integers are odd |
|  | C. Both integers are positive |
|  | D. If one integer is negative, the other is positive |
|  | E. If one integer is positive, the other is negative |

A square photo frame has an outer perimeter of 36 inches and is 1 inch wide on all sides. What is the inner perimeter of the frame, in inches?

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|  | A. 27 |
|  | B. 27 \frac {1}{2} |
|  | C. 28 |
|  | D. 31 \frac {1}{2} |
|  | E. 32 |

If all of the phone extensions in a certain organisation must be even numbers, and if each of the extensions uses all four of the digits 1, 2, 3, and 6, what is the greatest number of four-digit extensions that the organisation can have?

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|  | A. 4 |
|  | B. 6 |
|  | C. 12 |
|  | D. 16 |
|  | E. 24 |

bus traveled 462 miles per tankful of gasoline on the highway and 336 miles per tankful of gasoline in the town. If the bus traveled 6 fewer miles per gallon in the town than on the highway, how many miles per gallon did the bus travel in the town?

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|  | A. 14 |
|  | B. 16 |
|  | C. 21 |
|  | D. 22 |
|  | E. 27 |

At a certain institution, 50 percent of the total number of students are freshmen. If 20 percent of the fresh-men are enrolled in the school of liberal arts and, of these, 30 percent are psychology majors, what percent of the students at the institute are freshmen psychology majors enrolled in the school of liberal arts?

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|  | A. 3% |
|  | B. 6% |
|  | C. 12% |
|  | D. 15% |
|  | E. 20% |

A plane was originally flying at an altitude of f feet when it ascended 2,000 feet and then descended 5,000 feet. If the plane’s altitude after these two changes was \frac {1}{3}its original altitude, then the solution of which of the following equations gives the plane’s original altitude, in feet?

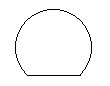
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|  | A. f+2000=\frac {1}{3}(f-3000) |
|  | B. \frac {1}{3}(f-3000)-f |
|  | C. f+3000=\frac {1}{3}f |
|  | D. f-7000=\frac {1}{3}f |
|  | E. f-300=\frac {1}{3}f |

If the tens digit a and the units digit b of a positive integer x are reversed, the resulting integer is 9 more than x. What is b in terms of a ?

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|  | A. 10-a |
|  | B. 9-a |
|  | C. a+9 |
|  | D. a-1 |
|  | E. a+1 |

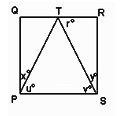
At a certain organization, out of the 10 employees, 5 had annual salaries of $20,000, 4 had annual salaries of $25,000, and 1 had an annual salary of $30,000. If a bonus equal to 10 percent of annual salary was given to each employee, what was the total amount of the bonuses?

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|  | A. $230000 |
|  | B. $75000 |
|  | C. $30000 |
|  | D. $23000 |
|  | E. $7500 |



The figure above shows the shape of a tunnel entrance. If the curved portion is \frac {3}{4}of a circle and the base of the entrance is 12 feet across, what is the perimeter, in feet, of the curved portion of the entrance’?

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|  | A. 9 \pi |
|  | B. 12 \pi |
|  | C. 9 \pi \sqrt{2} |
|  | D. 18 \pi |
|  | E. \cfrac {9 \pi}{\sqrt{2}} |



In the figure above, if PQRS is a square and QT = TR, which of the following statements is NOT true?

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|  | A. PT = TS |
|  | B. x = y |
|  | C. u = v |
|  | D. r = y |
|  | E. The area of \triangle PQTis equal to the area of \triangle SRT. |

A certain super saver plan offers customers reduced rates for electricity used between 8 p.m. and 8 a.m. weekdays and 24 hours a day Saturdays and Sundays. Under this plan, the reduced rates apply to what fraction of a week?

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|  | A. \cfrac {1}{2} |
|  | B. \cfrac {5}{8} |
|  | C. \cfrac {9}{14} |
|  | D. \cfrac {16}{21} |
|  | E. \cfrac {9}{10} |

A certain mixture consists of 5 parts almonds to 2 parts walnuts, by weight. What is the number of pounds of almonds in 140 pounds of the mixture ?

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|  | A. 100 |
|  | B. 84 |
|  | C. 40 |
|  | D. 28 |
|  | E. 20 |

Jackson’s comic book collection contains 1/3 Killer Fish comics and 3/8 Shazaam Woman comics. The remainder of his collection consists of Boom comics. If Jackson has 70 Boom comics, how many comics does he have in his entire collection?

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|  | A. 120 |
|  | B. 160 |
|  | C. 210 |
|  | D. 240 |
|  | E. 300 |

The pages of a book are numbered consecutively from 1 to 10. If the sum of the page numbers up to and including page number n of the book is equal to one more than the sum of the page numbers following page number n, then n =

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|  | A. 4 |
|  | B. 5 |
|  | C. 6 |
|  | D. 7 |
|  | E. 8 |

One millisecond is 0.001 of a second. The costs for a single run of a program are $1.07 for operating-system overhead, $0.023 per millisecond of computer time, and $4.35 for the mounting of a data tape. What is the total of these three costs for 1 run of a program that requires 1.5 seconds of computer time?

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|  | A. $7.15 |
|  | B. $8.87 |
|  | C. $28.96 |
|  | D. $35.57 |
|  | E. $39.92 |

A certain hall has 100 balcony seats. For every $2 increase in the price of a balcony seat above $10, 5 fewer seats will be sold. If all the balcony seats are sold when the price of each seat is $10, which of the following could be the price of a balcony seat if the revenue from the sale of balcony seats is $1,360?

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|  | A. $12 |
|  | B. $14 |
|  | C. $16 |
|  | D. $17 |
|  | E. $18 |

If mand nare positive numbers and \cfrac {1}{m}=\cfrac  {m}{n}=\cfrac {n}{8}, then m+n=

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|  | A. 4 |
|  | B. 6 |
|  | C. 7 |
|  | D. 8 |
|  | E. 9 |

If m^2<m. then m must be

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|  | A. Less than 0 |
|  | B. Equal to 0 |
|  | C. Between 0 and 1 |
|  | D. Equal to 1 |
|  | E.Greater than 1 |

On the number line, the number x is twice as many units from -2 as -2 is from 6. If x is less than â€“2, what is the value of x

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|  | A. -18 |
|  | B. -10 |
|  | C. -6 |
|  | D. 10 |
|  | E. 14 |

A certain store sells all magazines at one price and all books at another price. On Monday the store sold 12 magazines and 10 books for a total of $38.00, and on Tuesday the store sold 20 magazines and 15 books for a total of $60.00. At this store, how much less does a magazine sell for than a book?

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|  | A. $0.25 |
|  | B. $0.50 |
|  | C. $0.75 |
|  | D. $1.00 |
|  | E. $l.25 |

Which of the following inequalities is equivalent to â€“2 < a < 4 ?

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|  | A. | a â€“ 2 | < 4 |
|  | B. | a â€“ 1 | < 3 |
|  | C. | a + 1 | < 3 |
|  | D. | a + 2 | < 4 |
|  | E. None of the above |

Mr Chris, the losing candidate in a two-candidate election, received 942,568 votes, which was exactly 40 percent of all the votes cast. Approximately what percent of the remaining votes would he need to have received in order to have won at least 50 percent of all the votes cast?

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|  | A. 10% |
|  | B. 12% |
|  | C. 15% |
|  | D. 17% |
|  | E. 20% |

If the area of a square region having sides of length 6 centimeters is equal to the area of a rectangular region having width 2.5 centimeters, then the length of the rectangle, in centimeters, is

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|  | A. 9.6 |
|  | B. 10.5 |
|  | C. 9.5 |
|  | D. 14.4 |
|  | E. 8.5 |

If a, b, and c are positive integers and 3a= 4b = 7c, then the least possible value of a + b + c is

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|  | A. 33 |
|  | B. 40 |
|  | C. 49 |
|  | D. 61 |
|  | E. 84 |

A part-time employee whose hourly wage was increased by 25 percent decided to reduce the number of hours worked per week so that the employeeâ€™s total weekly income would remain unchanged. By what percent should the number of hours worked be reduced?

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|  | A. 12.5% |
|  | B. 20% |
|  | C. 25% |
|  | D. 50% |
|  | E. 75% |

In a certain university, 40 more than \cfrac{1}{3}of all the students are taking a science course and \cfrac{1}{4}of those taking a science course are taking physics. If \cfrac{1}{8}of all the students in the school are taking physics, how many students are in the university?

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|  | A. 240 |
|  | B. 300 |
|  | C. 480 |
|  | D. 720 |
|  | E. 960 |

Last year Manny received 26 paychecks. Each of his first 6 paychecks was $750; each of his remaining paychecks was $30 more than each of his first 6 paychecks. To the nearest dollar, what was the average (arithmetic mean) amount of his paychecks for the year ?

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|  | A. $752 |
|  | B. $755 |
|  | C. $765 |
|  | D. $773 |
|  | E. $775 |

In a certain brick wall, each row of bricks above the bottom row contains one less brick than the row just below it. If there are 5 rows in all and a total of 75 bricks in the wall, how many bricks does the bottom row contain?

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|  | A. 14 |
|  | B. 15 |
|  | C. 16 |
|  | D. 17 |
|  | E. 18 |

Machines X and Y always operate independently and at their respective constant rates. When working alone machine X can fill a production lot in 5 hours, and machine Y can fill the same lot in x hours. When the two machines operate simultaneously to fill the production lot, it takes them 2 hours to complete the job. What is the value of x?

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|  | A. 3 \frac {1}{3} |
|  | B. 2 \frac{1}{3} |
|  | C. 3 |
|  | D. 2 \frac {1}{2} |
|  | E. 1 \frac{1}{2} |

Vertices of a quadrilateral PQRS are P(0, 0), Q(4, 5), R(9, 9) and S(5, 4). What is the shape of the quadrilateral?

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|  | A. Square |
|  | B. Rectangle but not a square |
|  | C. Rectangle |
|  | D. Parallelogram but not a rhombus |
|  | E. Rhombus |

Each edge of a cubical block of wood measures 2 inches. What is the surface area of the block in square inches ?

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|  | A. 4 |
|  | B. 8 |
|  | C. 12 |
|  | D. 16 |
|  | E. 24 |

In 1961 the price of a new model S car was x dollars. If the price of the model S car increased each year by 10 percent of the previous year’s price, what was the price of the car, in dollars, in 1963 ?

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|  | A. 1.10x |
|  | B. 1.20x |
|  | C. 1.21x |
|  | D. 1.25x |
|  | E. 1.33x |