

SOLUTIONS: QUANT

36. (a); Required average = $\frac{250+550+400}{3} = 400$
37. (e); Votes polled by females = $\frac{25}{100} \times 8000 = 2000$
 Votes polled by males = 6000
 Valid female votes = 1875
 Valid male votes = $7600 - 1875 = 5725$
38. (d); Required average = $\frac{2250+7600+4250}{3} = 4700$
39. (c); Required percentage = $\frac{2500}{6750} \times 100 \approx 37\%$
40. (b); Required percentage = $\frac{8000-4600}{8000} \times 100 \approx 42.5\%$
41. (b); Between 1 and 300 there are 100 multiples of 3 and 42 multiples of 7, while 14 are common multiples of 3 and 7
 So total no. of favourable cases = $100 + 42 - 14 = 128$
 Required probability = $\frac{128}{300} = \frac{32}{75}$
42. (a); Workdone in first 3 days = $3 \times \frac{1}{18} = \frac{1}{6}$
 Workdone in next 3 days = $\frac{2}{3} \times 3 \times \frac{1}{24} = \frac{1}{12}$
 Remaining work = $\left[1 - \left(\frac{1}{6} + \frac{1}{12}\right)\right] = \frac{3}{4}$
43. (c); Sol. Let length and breadth are $7a, 3a$
 Perimeter = $20a$
 Circumference of circle = $20a + 8$
 Radius of circle = $\frac{1}{2} \times 7a = 3.5a$
 $2a + 8 = \frac{44}{7} \times \frac{7}{2} \times a, a = 4$
 Length = 28 cm
44. (b); 10% of $x = 6\%$ of y
 $\frac{x}{y} = \frac{3}{5}$
 $x = 1500, y = 2500$
45. (a)
 Sol. Let sum of length of both trains = L
 And speed = x & y
 $\frac{L}{x-y} = 182, \frac{L}{x+y} = 14$
 $14(x+y) = 182(x-y)$
 $\frac{x-y}{x+y} = \frac{1}{13}$
 $12x = 14y = x = \frac{7}{6}y$
 Required percentage = $\frac{(7-6)}{6} \times 100 = 16\frac{2}{3}\%$
 or 16.67%
46. (a); The pattern is +9, +18, +36, +72.....
 $74 + 72 = 146$
47. (b) The pattern is +6, $\frac{1}{+11} + 17, \frac{1}{+10} + 27, \frac{1}{+9} + 36, \frac{1}{+8} + 44$
 $101 + 44 = 145$
48. (d) The pattern is $+2^2, -3^2, +4^2, -5^2$
 $10 + 6^2 = 46$
49. (b); Sol. The pattern is $\times 2 + 2, \times 3 - 3, \times 4 + 4, \times 5 - 5$
 $915 \times 6 + 6 = 5496$
50. (b); The pattern is +7, $\frac{1}{+9} + 16, \frac{1}{+8} + 24, \frac{1}{+7} + 31, \frac{1}{+6} + 37$
 $90 + 37 = 127$
51. (d); Required percent = $\frac{760}{2640} \times 100 = 28.78\% \approx 28\%$
52. (c); Total students from state A in 2004 and 2005 = $260 + 320 = 580$
 Total students from state B in 2008 and 2009 = $440 + 760 = 1200$
 Difference = $1200 - 580 = 620$
53. (b); Required Ratio = $\frac{340+320+440}{320+660+440} = \frac{1100}{1420} = \frac{55}{71}$
54. (e); Required ratio = $\frac{\frac{110}{100} \times 440}{\frac{115}{100} \times 760} = \frac{484}{874} = \frac{242}{437}$
55. (c); Difference = $\frac{3120}{6} - \frac{2640}{6} = 520 - 440 = 80$
56. (d); $x = \frac{21}{3}, \frac{1}{3} y = 8, 7$
 $y = 7, \frac{1}{3}$
 $y \geq x$
57. (e); $x = \frac{9}{2}, \frac{8}{2} y = \frac{11}{2}, \frac{8}{2}$
 $= 4.5, 4 = 5.5, 4$
 No. relation can be established.
58. (b); $x = 13$
 $y = \pm 13$
 $x \geq y$
59. (e); $x = -\frac{15}{3}, -\frac{5}{3} y = -\frac{12}{3}, -\frac{2}{3}$
 $= -5, -\frac{5}{3} = -4, -\frac{2}{3}$
 No relation can be established.
60. (a); $x = -\frac{3}{3}, -\frac{2}{3} y = -\frac{12}{3}, -\frac{6}{3}$
 $x = -1, -\frac{2}{3} = -4, -2$
 $x > y$
61. (c); Let seller bought 100 gram at Rs. 100.
 Selling price = $\frac{90}{100} \times \frac{150}{100} \times 100 = 135$
 But he weigh 80 gram instead of 100 gram because he cheats 20% in weight.
 Profit% = $\frac{135-80}{80} \times 100 = \frac{55}{80} \times 100 = 68.75 \approx 68\%$

62. (d); Milk left = $81 \left(1 - \frac{27}{81}\right)^2$

$$= 81 \left(1 - \frac{1}{3}\right)^2$$

$$= 81 \times \frac{4}{9} = 36$$

$$\text{Required Ratio} = \frac{\frac{36}{81-36}}{\frac{36}{45}} = \frac{36}{45} = \frac{4}{5}$$

63. (d); $\begin{matrix} A & B & C \\ x+2 & x & x+3 \end{matrix}$

$$\frac{x+2+6}{x-2} = \frac{5}{3}$$

$$\frac{x+8}{x-2} = \frac{5}{2}$$

$$3x+24 = 5x-10$$

$$34 = 2x$$

$$x = 17$$

$$\text{Age of C, 6 year ago} = 17 + 3 - 6$$

$$= 14 \text{ years}$$

64. (c)

A	B	C
$x \times 6 + 6 \times \frac{3}{2}x$	$2x \times 6 + 4x \times 6$	$4x \times 6 + 3x \times 6$
$6x + 9x$	$12x + 24x$	$24x + 18x$
$15x$	$36x$	$42x$
5	12	14

65. (b); Increase in average marks = $\frac{(72+61)-(48+65)}{20}$

$$= \frac{133 - 113}{20} = \frac{20}{20} = 1$$

$$\text{Correct average} = 68 + 1 = 69$$

66. (c); $106 + 63 = 0.5 \times ? + \frac{?}{100} \times 80$

$$16900 = 130 \times ?$$

$$? = 130$$

67. (a); $0.5 \times 0.4 \times \frac{15}{7} = ?$

$$? = \frac{3}{7} = 0.43$$

68. (d); $?^2 = 324 \times 529$

$$? = 414$$

65. (e); $? = \frac{5333}{856} \approx 6.25$

70. (a); $? = 131.75 + 161.2 = 292.95$
 ≈ 295