

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, $\overset{+11}{\cup}$ + 17, $\overset{+10}{\cup}$ + 27, $\overset{+9}{\cup}$ + 36, $\overset{+8}{\cup}$ + 44.....
 101 + 44 = 145
48. (d) The pattern is +2², -3², +4², -5².....
 10 + 6² = 46
49. (b); Sol. The pattern is × 2 + 2, × 3 - 3, × 4 + 4, × 5 - 5.....
 915 × 6 + 6 = 5496
50. (b); The pattern is +7, $\overset{+9}{\cup}$ + 16, $\overset{+8}{\cup}$ + 24, $\overset{+7}{\cup}$ + 31, $\overset{+6}{\cup}$ + 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 = $\frac{3120}{6} - \frac{2640}{6} = 80 - 440 = -360$
56. (d); $x = \frac{21}{3}, \frac{1}{3}$ y = 8, 7
 $= 7, \frac{1}{3}$
 $y \geq x$
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% = $\frac{135-80}{80} \times 100 = \frac{55}{80} \times 100 = 68.75\% \approx 68\%$

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

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

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

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

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

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

$$\frac{x+8}{x-2} = \frac{5}{3}$$

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

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

$$34 = 2x$$

$$x = 17$$

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

$$= 14 \text{ years}$$

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

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

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

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

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

$$16900 = 130 \times ?$$

$$? = 130$$

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

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

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

$$? = 414$$

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

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

$$\approx 295$$

