

# 1

This chapter largely includes addition, subtraction, multiplication, division, divisibility, squaring, square root, cube, cube root of exact cubes, etc. To learn the quicker methods regarding the above mentioned topics, you are advised to consult *Magical Book on Quicker Maths* published by our publication. Here we are providing sufficient practice exercises with answers and hints. Before taking up the practice exercises, make sure you have gone through the chapters of basic calculations from the text book on 'Quicker Maths'.

## Exercise

### 1. Find the value of the following.

- 101 + 1001 + 2003 + 30005 + 9056
- 5001 + 52351 + 5555 + 55 + 5
- 10.01 + 10.0001 + 100.1101 + 1000.1111
- 5.231 + 2.3 + 4.03 + 16.110 + 49.327
- 5.838 + 6.929 + 7.001 + 8.9 + 10.987
- 1234 - 569 + 789 - 1003 + 596
- 59.67 - 42.83 + 61.73 + 5.89 + 0.093
- 89345 + 30075 - 76521 - 786
- 789.345 + 30.075 - 765.21 - 7.86
- 426.53 + 72.56 - 183.93 - 286.52 + 79.5
- 106.18 - 108.16 - 108.24 - 108.14
- 47.932 + 56 + 97.168 - 67 - 78.3 - 22.7
- 33 - 32.1 - 33.1 - 34.1

### 2. Find the value of the following.

- 111111 × 11
- 122221 - 122221 - 22221 - 1222221

## Basic Calculations

- 23145 × 11
- 89067 × 11
- 5776800 × 11
- 4789300 × 11
- 12369 × 11

### 3. Find the value of the following

- 135609 × 12
- 458963 × 12
- 254792 × 12
- 314786 × 12
- 741258 × 12

### 4. Find the value of the following.

- 15873 × 13
- 15476 × 13
- 56287 × 14
- 444258 × 15

### 5. Find the value of $(0.8239 + 0.762 + 0.02 + 5.26)$

- 6.6859
- 6.8659
- 6.8569
- 6.8639

### 6. If $15.9273 - x = 11.0049$ , then the value of $x$ is \_\_\_\_\_.

- 26.9322
- 4.9224
- 0.49224
- 4.9324

7. If  $175 \times 1.24 = 217$ , then the value of  $1.75 \times 124$  is \_\_\_\_\_.  
 a) 217    b) 2.17    c) 0.0217    d) 21.7

8.  $172.23 - ? = 63.83 + 22$   
 a) 130.4    b) 86.40    c) 108.18    d) 85.83

9.  $15.60 \times 0.30 = ?$

- a) 4.68    b) 0.458    c) 0.468    d) 0.0468

[Bank PO Exam, 1991]

10.  $7.83 - (3.79 - 2.56) = ?$

- a) 4.04    b) 1.48    c) 6.06    d) 6.6

[Bank PO Exam, 1991]

11.  $\frac{3420}{19} = \frac{?}{0.01} \times 7$

- a)  $\frac{35}{9}$     b)  $\frac{63}{5}$     c)  $\frac{18}{7}$     d) None of these

[Bank PO Exam, 1988]

12. If  $12276 \div 155 = 79.2$ , the value of  $122.76 \div 15.5$  is equal to  
 a) 7.092    b) 7.92    c) 79.02    d) 79.2

[CDS Exam, 1991]

13.  $\frac{17.28 \div ?}{3.6 \times 0.2} = 200$

- a) 120    b) 1.20    c) 12    d) 0.12

[Bank PO Exam, 1988]

14.  $80.40 \div 20 - (-4.2) = ?$

- a) 497.8    b) 5.786    c) 947.0    d) 8.22

[Bank PO Exam, 1986]

15.  $12 \div 0.09$  of  $0.3 \times 2 = ?$

- a) 0.80    b) 8.0    c) 80    d) None of these

[Bank Clerical Exam, 1988]

16.  $\frac{20 + 8 \times 0.5}{20 - ?} = 12$

- a) 8    b) 18    c) 2    d) None of these

[Bank Clerical Exam, 1990]

17. If  $\sqrt{5} = 2.24$ , then the value of  $\frac{3\sqrt{5}}{2\sqrt{5} - 0.48}$  will be:  
 a) 0.168    b) 1.68    c) 16.8    d) 168

[Central Excise & I. Tax Exam, 1988]

18. It being given that  $\sqrt{15} = 3.88$ , the best approximation

to  $\sqrt{\frac{5}{3}}$  is:

- a) 0.43    b) 1.89    c) 1.29    d) 1.63

[SBI PO Exam, 1987]

19.  $6\frac{1}{4} \times 0.25 + 0.75 - 0.3125 = ?$

- a) 5.9375    b) 4.2968    c) 2.1250    d) 2.0000

[BSRB Bank PO Exam, 1990]

20.  $\sqrt{\frac{0.289}{0.00121}} = ?$

- a)  $\frac{170}{11}$     b)  $\frac{17}{110}$     c)  $\frac{0.17}{11}$     d)  $\frac{17}{11}$

[Railway Recruitment Board Exam, 1991]

21.  $542 - 369 + 171 - 289 = ?$

- a) 135    b) 55    c) 255  
 d) 245    e) 265

22.  $5329 + 4328 - 369 - 7320 = ?$

- a) 1698    b) 1998    c) 1958  
 d) 1968    e) None of these

23.  $5555 + 6666 - 9999 - 1111 = ?$

- a) 1001    b) 1011    c) 1111  
 d) 1221    e) None of these

24.  $15 \times 18 + 16 \times 17 + 12 \times 11 = ?$

- a) 674    b) 574    c) 664  
 d) 764    e) None of these

25.  $9 \times 122 + 11 \times 84 = ?$

- a) 2222    b) 2022    c) 2002  
 d) 2332    e) None of these

26.  $732 \times 489 = ?$

- a) 351148    b) 367948    c) 357948  
 d) 357489    e) 354799

27.  $4321 \times 6327 = ?$

- a) 27338967    b) 38432967    c) 32834563  
 d) 27336966    e) 17448697

28.  $25 \times 26 + 35 \times 34 + 39 \times 41 = ?$

- a) 3440    b) 3330    c) 3439  
 d) 3339    e) None of these

29.  $7.32 \times 4.12 = ?$

- a) 33.1564    b) 30.1584    c) 30.3334  
 d) 39.1584    e) 30.1564

30.  $560 \div 4.2 = ?$

- a)  $133\frac{1}{3}$     b)  $132\frac{2}{3}$     c)  $143\frac{1}{3}$

- d)  $163\frac{1}{3}$     e) None of these

31. Which is greater?

- a)  $\frac{5}{9}$  or  $\frac{15}{19}$     b)  $\frac{7}{8}$  or  $\frac{8}{9}$     c)  $\frac{17}{19}$  or  $\frac{20}{21}$

- d)  $\frac{13}{17}$  or  $\frac{12}{18}$     e)  $\frac{10}{13}$  or  $\frac{20}{23}$

32.  $\sqrt{5297} = ?$  (Approx)

- a) 70.7    b) 71.87    c) 72.78  
 d) 74.73    e) 75.62

33.  $(79)^2 = ?$

- a) 6421    b) 6681    c) 6111  
 d) 6211    e) 6241

34.  $(17)^2 + (23)^2 = ?$

## Basic Calculations

- a) 718      b) 818      c) 988  
 d) 828      e) 728
35.  $8^3 + 9^3 - 7^3 = ?$
- a) 898      b) 888      c) 788  
 d) 998      e) None of these
36.  $13^3 - 12^3 = ?$
- a) 369      b) 396      c) 496  
 d) 466      e) 469
37.  $\sqrt{(2197)^{\frac{1}{3}} + (1728)^{\frac{1}{3}}} = ?$
- a) 6      b) 5      c) 4  
 d) 7      e) 8
38.  $\left[ (68921)^{\frac{1}{3}} - (2744)^{\frac{1}{3}} \right]^{\frac{1}{3}} = ?$
- a) 2      b) 3      c) 4  
 d) 5      e) None of these
39.  $43\% \text{ of } 125 + 65\% \text{ of } 10\frac{5}{13} = ?$
- a) 60.5      b) 250      c) 255  
 d) 275      e) None of these
40.  $165\% \text{ of } 140 + 12.5\% \text{ of } 192 = ?$
- a) 155      b) 250      c) 255  
 d) 275      e) None of these
41.  $4\frac{1}{2} - 3\frac{1}{7} + 13\frac{2}{7} - 8\frac{1}{4} = ?$
- a)  $5\frac{11}{28}$       b)  $5\frac{13}{28}$       c)  $6\frac{11}{28}$   
 d)  $5\frac{15}{28}$       e)  $6\frac{17}{28}$
42.  $7\frac{1}{3} \times 5\frac{1}{4} - 8\frac{1}{7} \times 2\frac{4}{19} = ?$
- a)  $20\frac{1}{2}$       b)  $20\frac{1}{3}$       c)  $20\frac{1}{4}$   
 d)  $21\frac{1}{3}$       e)  $21\frac{1}{4}$
43.  $\frac{17}{19} + \frac{15}{17} = ?$  (Approx)
- a) 1.6771      b) 1.7661      c) 1.7771      d) 1.7777  
 e) 1.6666
44.  $\frac{1}{9} + \frac{4}{21} = ?$  (approx)
- a) 0.30158      b) 0.30155      c) 0.30148      d) 0.30147  
 e) 0.30162
45.  $\frac{3}{7} + \frac{5}{9} - \frac{13}{14} = ?$
- a)  $\frac{1}{16}$       b)  $\frac{1}{17}$       c)  $\frac{1}{18}$       d)  $\frac{1}{19}$       e)  $\frac{1}{20}$
46. What approximate value should come in the place of the question mark (?) in the following equation?
- $12833 + 133\% \text{ of } 1655 - \frac{7}{5} \text{ of } 3533 = ?$
- a) 9000      b) 10000      c) 10500  
 d) 11000      e) 9500
47. What approximate value should come in place of the question mark (?) in the following equation?
- $9837 + 315 \times 6 - 77 \times 13 + 10\% \text{ of } 1500 = ?$
- a) 10600      b) 10850      c) 11200  
 d) 10700      e) 11000
48. What will be the approximate value of  $163\% \text{ of } 2395$ ?
- a) 3870      b) 3890      c) 3900  
 d) 3820      e) 3935
49. What is the approximate value of the following expression?
- $12 \times 13 + 105\% \text{ of } 933 + 879 \div 18 + 15$
- a) 1150      b) 1170      c) 1185  
 d) 1200      e) 1215
50. Find the approximate value of question mark (?) in the following expression.
- $34\sqrt{?} + 37.08^2 - 476.78 = 2400$
- a) 1840      b) 1900      c) 1960  
 d) 2020      e) 2080
51. Find the approximate value of
- $234 \div 17 + 15.3 \times 18 - 13 \times 3.7$
- a) 250      b) 220      c) 240  
 d) 230      e) 260
52. What approximate value should come in place of the question mark (?)?
- $12591 \div 39.8 + 933 \div 13 - 12.86 \times 14.2 + 135 = ?$
- a) 340      b) 330      c) 325  
 d) 350      e) 355
53. Find the approximate value of
- $33\% \text{ of } 1235 + 917 \div 12 - 129\% \text{ of } 765 + 682$
- a) 160      b) 180      c) 200  
 d) 210      e) 225
54. What approximate value should come in place of question mark (?)?
- $119\% \text{ of } 1190 + 33\% \text{ of } 125 - 97\% \text{ of } 813 = ?$
- a) 620      b) 700      c) 675  
 d) 725      e) 625
55. What approximate value should come in place of question mark (?)?
- $12\frac{1}{4}\% \text{ of } 1379 + 7\% \text{ of } 320 - 23\% \text{ of } 490 = ?$
- a) 68      b) 73      c) 80  
 d) 88      e) 96

## PRACTICE BOOK ON QUICKER MATHS

56. Find the approximate value of the following expression.  
 $32\% \text{ of } 231 - 36.5\% \text{ of } 64 + 63\% \text{ of } 128$   
 a) 140      b) 135      c) 130  
 d) 125      e) 145

57. Find the approximate value of  
 $278\% \text{ of } 1365 - 138.2 \times 36.8 + 12^3 - 13^2$   
 a) 265      b) 250      c) 280  
 d) 295      e) 235

58. Find the approximate value of the following expression.  
 $89.32^2 - 74\% \text{ of } 513 + 7379 - 918 \times 1.8$   
 a) 12310      b) 12325      c) 13340  
 d) 13325      e) 13310

59. Find the approximate value of the following expression?  
 $758.4 \times 744.6 - 338976 + 414.4^2$   
 a) 401500      b) 398500      c) 397000  
 d) 395500      e) 400000

60. What approximate value should come in place of the question mark?  
 $11^3 + 0.8^3 + 12^3 + 1.1^3 + 1.2^3 = ?$   
 a) 3063      b) 3060      c) 3066  
 d) 3060      e) 3068

61. What approximate value should come in place of the question mark (?)?  
 $281\sqrt{24} - 87 \times 3 + 18 \times 9 = ?$   
 a) 1280      b) 1290      c) 1310  
 d) 1350      e) 1400

62. What approximate value should come in place of the question mark (?)?  
 $112\% \text{ of } 1523 - 96\% \text{ of } 121 + 27\% \text{ of } 486 = ?$   
 a) 1800      b) 1600      c) 1650  
 d) 1700      e) 1750

63. What approximate value should come in place of the question mark (?) in the following question?  
 $324\sqrt{1300} + 793 = ? + 450$   
 a) 12000      b) 12150      c) 12200  
 d) 12250      e) 12300

64. What approximate value should come in place of the question mark (?)?  
 $186.4\% \text{ of } 1768 - 2473.48 + 217\% \text{ of } 444 = ?$   
 a) 1750      b) 1800      c) 1650  
 d) 1700      e) 1850

65. What approximate value should come in place of the question mark (?)?  
 $(17.5b)^2 - 178.86 + \sqrt{180} - 45\% \text{ of } 216 = ?$

- a) 40      b) 43      c) 46  
 d) 37      e) 49

66. What approximate value should come in place of question mark (?)?  
 $17\% \text{ of } 1885 - 8\frac{1}{3}\% \text{ of } 275 + 17.6 \times 39.4 = ?$

- a) 995      b) 976      c) 988  
 d) 982      e) 1000

67. What approximate value should come in place of question mark (?)?  
 $(14.7e)^2 - 202.8 + 32\% \text{ of } 2637 - 37\% \text{ of } 422 = ?$

- a) 695      b) 705      c) 715  
 d) 725      e) 735

68. What approximate value should come in place of question mark (?)?  
 $\frac{7}{16} \text{ of } 3923 + 7496 - ? = \frac{13}{16} \text{ of } 357$

- a) 6205      b) 6200      c) 6197  
 d) 6203      e) 6194

69. What approximate value should come in place of question mark (?)?  
 $6\frac{2}{5} \text{ of } 1240 + 3\frac{7}{8} = ? + \frac{3}{2} \text{ of } 6130$

- a) 3,000      b) 2,500      c) 3,500  
 d) 2,000      e) 3,200

70. What approximate value should come in place of the question mark (?)?  
 $15,839 + 159\% \text{ of } 2317 - \frac{7}{5} \text{ of } 3589 = ?$

- a) 14,500      b) 14,000      c) 15,500  
 d) 13,500      e) 16,000

71. What approximate value should come in place of the question mark (?)?  
 $9\% \text{ of } 22 - 6\% \text{ of } 26 = ?$

- a) 0.50      b) 7      c) 4  
 d) 0.75      e) 1.5

72. Find the approximate value of the following expression.  
 $317.49^2 + 223.3 \times 407.5 - 191700.5$

- a) 180      b) 140      c) 90  
 d) 125      e) 110

73. What approximate value would come in place of (?)?  
 $9321.735 - 2674.296 = ? \times 423.731$

- a) 14.7      b) 15.6      c) 16.9  
 d) 16.5      e) 17.2

74. What approximate value would come in place of (?)?  
 $157\% \text{ of } 3540 + 129\% \text{ of } 1510 + ? = 117\% \text{ of } 4572$

- a) -2150      b) 2300      c) 2250  
 d) -2350      e) -225

75. What approximate value would come in place of (?)?  
 $31\% \text{ of } 731.45 + 223.2506 = ?\% \text{ of } 300$

- a) 75      b) 125      c) 150  
 d) 175      e) 200

76. What approximate value would come in place of (?)?  
 $\frac{8}{15} \text{ of } 4921 + 2137 = \frac{12}{17} \text{ of } 3451 + ?$

- a) 2360      b) 2225      c) 2325  
 d) 2220      e) 2380

## Basic Calculations

77. The price of 8 dozens of bamboos in Rs. 1500. What will be the **approximate** price of 125 such bamboos?  
 a) 2000      b) 1900      c) 1945  
 d) 1975      e) 1950
78. What **approximate** value should come in place of the question mark (?) in the following equation?  
 $5.6 \times 2569 + 2058 = 157\% \times 6529 + ?$   
 a) 5500      b) 6200      c) 6400  
 d) 6000      e) 9200
79. What **approximate** value should come in place of the question mark (?)?  
 $\sqrt{87432} - 17.5\% \text{ of } 132 = ? - 13.24 \times 2.5$   
 a) 300      b) 305      c) 310  
 d) 321      e) 315
80. What **approximate** value should come in place of the question mark (?)?  
 $6439 + 521 \times 69 - ? = 24897$   
 a) 18000      b) 14000      c) 17500  
 d) 16500      e) 19000
81. What **approximate** value should come in place of the question mark (?)?  
 $\frac{753 \times 446}{373} = ?$   
 a) 750      b) 650      c) 900  
 d) 1050      e) 1250
82. What **approximate** value should come in place of the question mark (?) in the following question?  
 $46.21 \times 501.56 + 29.8 \times 103.08 = ?$   
 a) 20,000      b) 22,000      c) 24,000  
 d) 26,000      e) 28,000
83. What **approximate** value should come in place of the question mark (?) in the following question?  
 $40.2\% \text{ of } 1656 - 16.8\% \text{ of } 2012 = ?$   
 a) 300      b) 325      c) 350  
 d) 400      e) 425
84. What **approximate** value should come in place of the question mark (?) in the following question?  
 $5208.62 - 4818.31 = 10865 - ?$   
 a) 52000      b) 5200      c) 10,000  
 d) 40,500      e) 6,000
85. What **approximate** value should come in place of the question mark (?) in the following question?  
 $400.8 \times 297.9 = ?$   
 a) 119390      b) 119395      c) 119398  
 d) 119400      e) 119405
86. What **approximate** value should come in place of the question mark (?) in the following question?  
 $15263 \times 1.2 + 7897 \times 1.5 = ?$   
 a) 25000      b) 30000      c) 3000  
 d) 35000      e) 38000
87. What **approximate** value should come in place of the question mark (?) in the following question?  
 $6256.56 + 15306.00 = 12999 - ?$   
 a) 5000      b) 5500      c) 6000  
 d) 8500      e) 7000
88. What **approximate** value should come in place of the question mark (?) in the following question?  
 $12.06 \times 15.15 \times 20.40 = ?$   
 a) 3000      b) 3400      c) 3500  
 d) 3700      e) 4000
89. What **approximate** value should come in place of the question mark (?) in the following question?  
 $\frac{100}{16 \times 5.88} = (?)^2$   
 a) 6      b) 7      c) 8  
 d) 9      e) 5
90. What **approximate** value should come in place of the question mark (?) in the following question?  
 $\frac{256}{\sqrt{17}} + \frac{190}{16} = ?$   
 a) 68      b) 76      c) 78  
 d) 70      e)  $\frac{446}{16}$
91. What **approximate** value should come in place of the question mark (?) in the following question?  
 $231.5\% \text{ of } 32.25 = ?$   
 a) 70      b) 72      c) 75  
 d) 80      e) 85
92. What **approximate** value should come in place of the question mark (?) in the following question?  
 $197\% \text{ of } 9998 = ?\% \text{ of } 14995$   
 a) 110      b) 125      c) 145  
 d) 150      e) 130
93. What **approximate** value should come in place of the question mark (?) in the following question?  
 $26.787 + 10232 - 29.898 = ?$   
 a) 6.1      b) 6.9      c) 7.1  
 d) 7.5      e) 6.4
94. What **approximate** value should come in place of the question mark (?) in the following question?  
 $5.08 + ? - 8.342 = 12.2$   
 a) 9      b) 10      c) 8.5  
 d) 15      e) 15.5
95. What **approximate** value should come in place of the question mark (?) in the following question?  
 $8661 + 3242 + 4122 \times 1.3 = ?$   
 a) 16000      b) 17000      c) 18000  
 d) 15000      e) 19000
96. What **approximate** value should come in place of the question mark (?) in the following equation?  
 $66\frac{2}{3}\% \text{ of } ? = 32.78 \times 18.44$

## PRACTICE BOOK ON QUICKER MATHS

- a) 900      b) 880      c) 920  
 d) 940      e) 860

97. What approximate value should come in place of the question mark (?) in the following equation?

$$158.25 \times 4.6 + 21\% \text{ of } 847 + ? = 950.93$$

[SBI PO Exam, 2000]

- a) 35      b) 40      c) 25  
 d) 50      e) 45

98. What approximate value should come in place of the question mark (?) in the following equation?

$$85.147 + 34.912 \times 6.2 + ? = 802.293$$

[SBI PO Exam, 2000]

- a) 400      b) 450      c) 550  
 d) 600      e) 500

99. What should come in place of the question mark (?) in the following equation?

$$9548 + 7314 = 8362 + ?$$

[SBI PO Exam, 2000]

- a) 8230      b) 8500      c) 8410  
 d) 8600      e) None of these

100. What should come in place of the question mark (?) in the following equation?

$$17 \frac{2}{3} \text{ of } 180 + \frac{1}{4} \text{ of } 480 = ?$$

[SBI PO Exam, 2000]

- a) 3180      b) 3420      c) 3200  
 d) 3300      e) None of these

101. What approximate value should come in place of the question mark (?) in the following equation?

$$248.251 \div 12.62 \times 20.52 = ?$$

[SBI PO Exam, 2000]

- a) 400      b) 450      c) 600  
 d) 350      e) 375

102. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following sequence are exactly equal. Which part is not equal to the other four? The number of that part is the answer.

$$120 \times 12 - 22 \times 20 = 10\% \text{ of } 5000 + \frac{2}{5} \text{ of } 1200$$

- a)                  b)

$$= 80 \times 40 - 20 \times 110 = 8640 \div 60 + 53.5 \times 16$$

- c)                  d)

$$= 5314 - 3029 - 1285$$

- e)

[SBI PO Exam, 2000]

103. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following sequence are exactly equal. Which part is not equal to the other four? The number of that part is the answer.

$$5^3 + 3^3 + 48 = 5^2 \times 3^3 - 475 = 3^5 - 44 =$$

- a)                  b)                  c)

$$4^3 + 2 \times 17 \times 4 = (6)^3 - (2)^4$$

- d)                  e)

[SBI PO Exam, 2000]

104. What approximate value should come in place of the question mark (?) in the following question?

$$6.595 \times 1084 + 2568.34 - 1708.34 = ?$$

[BSRB Mumbai PO, 1998]

- a) 6,000      b) 12,000      c) 10,000  
 d) 8,000      e) 9,000

105. Four of the five parts numbered (a), (b), (c), (d) and (e) are exactly equal. Which of the parts is not equal to the other four? The number of that part is the answer.

[BSRB Mumbai PO, 1998]

- a)  $16.80 \times 4.50 + 4.4$       b)  $1600 \div 40 + 16 \times 2.5$   
 c)  $5.5 \times 8.4 + 34.6$       d)  $1620 \div 20 - 1$   
 e)  $1856.95 - 1680.65 - 96.3$

106. What should come in place of the question mark (?) in the following equation?

$$5679 + 1438 - 2015 = ?$$

[BSRB Mumbai PO, 1998]

- a) 5192      b) 5012      c) 5102  
 d) 5002      e) None of these

107. What approximate value should come in place of the question mark (?) in the following equation?

$$159\% \text{ of } 6531.8 + 5.5 \times 1015.2 = ? + 5964.9$$

[BSRB Mumbai PO, 1998]

- a) 10,000      b) 10,900      c) 11,000  
 d) 10,600      e) 12,000

108. Four of the five parts numbered (a), (b), (c), (d) and (e) are exactly equal. Which of the parts is not equal to the other four? The number of that part is the answer.

- a)  $40\% \text{ of } 160 + \frac{1}{3} \text{ of } 240$       b)  $120\% \text{ of } 1200$   
 c)  $38 \times 12 - 39 \times 8$       d)  $1648 - 938 - 566$   
 e)  $6 \frac{1}{2} \text{ of } 140 - 2.5 \times 306.4$

109. The price of four tables and seven chairs is Rs 12,090. Approximately, what will be the price of twelve tables and twenty-one chairs?

[BSRB Mumbai PO, 1998]

- a) Rs 32,000      b) Rs 46,000      c) Rs 38,000  
 d) Rs 36,000      e) Rs 39,000

110. What should come in place of the question mark (?) in the following equation?

$$18 \frac{2}{5} \text{ of } 150.8 + ? = 8697.32 - 3058.16$$

[BSRB Mumbai PO, 1998]

- a) 2764.44      b) 2864.34      c) 1864.44  
 d) 2684.44      e) None of these

111. What approximate value should come in place of the question mark (?) in the following equation?

$$3 \frac{3}{5} \text{ of } 157.85 + 39\% \text{ of } 1847 = ? - 447.30$$

[BSRB Mumbai PO, 1998]

- a) 1200      b) 1500      c) 1600  
 d) 1800      e) 2100

## Basic Calculations

112. What should come in place of the question mark in the following questions?

$$\frac{?}{24} = \frac{72}{\sqrt{?}}$$

[SBI PO Exam, 1999]

- a) 12      b) 16      c) 114
- d) 144      e) None of these

**Directions (Q. 113-117):** Following (a) to (h) are combinations of an operation and an operand.

- |                    |                      |
|--------------------|----------------------|
| (a) means $\div 3$ | (b) means $\times 3$ |
| (c) means $- 3$    | (d) means $+ 3$      |
| (e) means $\div 2$ | (f) means $\times 2$ |
| (g) means $- 2$    | (h) means $+ 2$      |

You have been given one or more of these as answer choices for the following questions. Select the appropriate choice to replace the question mark in the equations.

113.  $42 \times 21 - 12 = ? = 880$  [SBI PO, 1999]

- a) a      b) f      c) g
- d) d      e) None of these

114.  $36 + 12 ? = 48$

- a) a followed by f
- c) b followed by f
- e) None of these

[SBI PO, 1999]

- b) a followed by b
- d) c followed by a

115.  $48 ? + 12 \times 4 = 80$

- a) e followed by b
- c) f followed by a
- e) None of these

[SBI PO, 1999]

- b) d followed by a
- d) b followed by f

116.  $18 \times 3 \div 2 + 3 < 27?$

- a) d followed by a
- c) d followed by g
- e) None of these

[SBI PO, 1999]

- b) a followed by g
- d) d followed by h

117.  $(48 + 9) \div 19 \times 2 = ? = 12?$

- a) a followed by h
- c) c followed by a
- e) None of these

[SBI PO, 1999]

- b) b followed by e
- d) a followed by d

118. What should come in place of the question mark (?) in the following equation?

$$6\frac{5}{6} \times 5\frac{1}{3} + 17\frac{2}{3} \times 4\frac{1}{2} = ?$$

[Bank of Baroda, 1999]

- a)  $112\frac{1}{3}$
- b) 663
- c) 240
- d)  $116\frac{2}{3}$
- e) None of these

119. What approximate value should come in place of the question mark (?) in the following equation?

$$\frac{5}{7} \text{ of } 1596 + 3015 = ? - 2150$$

- a) 7200
- b) 48000
- c) 5300
- d) 58000
- e) 6300

120. In the following equation what value would come in place of question mark (?)?

$$5798 - ? = 7385 - 4632$$

[Bank of Baroda, 1999]

- a) 3225
- b) 2595
- c) 2775
- d) 3045
- e) None of these

121. Four of the five parts numbered (a), (b), (c), (d) and (e) are exactly equal. Which of the parts is not equal to the other four? The number of that part is the answer.

[Bank of Baroda, 1999]

$$732.534 + 412.256 - 544.29 = 1256.214 - 355.514 - 300.2 \\ = 246.86 + 439.38 - 80.74 = 1415.329 + 532.4 - 1347.229 \\ = 398.14 - 239.39 + 441.75 \\ =$$

122. What approximate value should come in place of the question mark (?) in the following equation?

$$152\sqrt{?} + 795 = 8226 - 3486$$

[Bank of Baroda, 1999]

- a) 425
- b) 985
- c) 1225
- d) 1025
- e) 675

123. Four of the five parts numbered (a), (b), (c), (d) and (e) are exactly equal. Which of the parts is not equal to the other four? The number of that part is the answer.

[SBI Associates PO, 1999]

$$a) \frac{175 \times 18}{7 \times 15} = \frac{5^3 \times 3^2 \times 36}{45 \times 30} = \\ c) \frac{32 \times 5 + 6^2 + 2^2}{8 \times 5 \times 6 \div 36} = \frac{65 \times 24}{26 \times 8 \div \sqrt{16}} = \\ e) \frac{35 \times 5 \times 9 \times 2}{7 \times 5^2} =$$

124. What should come in place of question mark (?) in the following equation?

$$197 \times ? + 16^2 = 2620$$

[Guwahati PO, 1999]

- a) 22
- b) 12
- c) 14
- d) 16
- e) None of these

125. What approximate value should come in place of question mark (?) in the following equation?

$$287.532 + 1894.029 - 657.48 = 743.095 + ?$$

[Guwahati PO, 1999]

- a) 870
- b) 790
- c) 780
- d) 770
- e) 890

126. Four of the five parts numbered (a), (b), (c), (d) and (e) are exactly equal. Which of the parts is not equal to the other four? The number of that part is the answer.

$$45 \times 120 + 5^2 \times 10 = 113 \times 25 \times 2 = 27 \times 25 \times 8 + 15 \times 6 + 4 \times 40 =$$

- a)
- b)
- c)
- d)
- e) [Guwahati PO, 1999]

127. What should come in place of question mark (?) in the following equation?

$$27\frac{3}{11} + 118\frac{2}{5} - 32\frac{5}{22} = 11\frac{6}{11} + ?$$

[Guwahati PO, 1999]

## PRACTICE BOOK ON QUICKER MATHS

a)  $113\frac{9}{10}$     b)  $111\frac{9}{11}$     c)  $90\frac{9}{10}$

d)  $101\frac{9}{11}$     e) None of these

128. Which of the following numbers are completely divisible by seven?

- A) 195195    B) 181181    C) 120120    D) 891891  
[BSRB Mumbai PO, 1999]

- a) Only A and B    b) Only B and C  
c) Only D and B    d) Only A and D  
e) All are divisible

129. What should come in the place of the question mark (?) in the following equation?

$$\frac{21}{25} \div \frac{9}{20} \times \frac{5}{12} \div \frac{10}{17} = ?$$

[BSRB Mumbai PO, 1999]

a)  $7\frac{77}{125}$     b)  $11\frac{9}{10}$     c)  $\frac{119}{450}$

d)  $1\frac{29}{90}$     e) None of these

130. What should come in the place of the question mark (?) in the following equation?

$$69012 - 20167 + (51246 \div 6) = ?$$

[BSRB Mumbai PO, 1999]

- a) 57385    b) 57286    c) 57476  
d) 57368    e) None of these

131. What should come in the place of the question mark (?) in the following equation?

$$\frac{45^2 \times 27^2}{135^2} = ?$$

[BSRB Mumbai PO, 1999]

- a) 81    b) 1    c) 243  
d) 9    e) None of these

132. What should come in place of the question mark (?) in the following equation?

$$4\frac{1}{2} \times 4\frac{1}{3} - 8\frac{1}{3} \div 5\frac{2}{3} = ?$$

[BSRB Mumbai PO, 1999]

a) 8    b)  $18\frac{1}{34}$     c)  $1\frac{33}{34}$

d)  $\frac{7}{17}$     e) None of these

133. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following equation are exactly equal. You have to find out the part that is not equal to the other four. The number of that part is the answer.

[BSRB Mumbai PO, 1999]

$$7529.0 - 6(1110.555) = 593.27 - 167.20 + 439.60$$

- a)    b)

$$= 490.92 + 439.65 - 64.9 = (7189.3 - 2860.93) + 5$$

- c)    d)

$$= 2(269.40 + 163.435)$$

- e)

134. What approximate value should come in place of the question mark (?) in the following equation?

$$9\% \text{ of } 64 + 32\% \text{ of } 90 = ?$$

[BSRB Mumbai PO, 1999]

- a) 40    b) 30    c) 35  
d) 45    e) 50

135. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following equation are exactly equal. You have to find out the part that is not equal to the other four. The number of that part is the answer.

[BSRB Calcutta PO, 1999]

$$375.789 + 41.28 - 115.249 = 6.45 \times 120.8 - 477.34$$

- a)    b)

$$= 1015.71 - 738.416 + 24.526 = 853.12 + 109.73 - 661.03$$

- c)    d)  
=  $132.8 \times 3.5 - 152.98$   
e)

136. What approximate value should come in place of the question mark (?) in the following equation?

$$8.539 + 16.84 \times 6.5 \div 4.2 = ?$$

[BSRB Calcutta PO, 1999]

- a) 25    b) 42    c) 44  
d) 35    e) 40

137. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following equation are exactly equal. You have to find out the part that is not equal to the other four. The number of that part is the answer.

[BSRB Calcutta PO, 1999]

$$45\% \text{ of } 1600 + \frac{2}{3} \text{ of } 270 = 80\% \text{ of } 1000 + 100\% \text{ of } 100$$

- a)    b)

$$= 140\% \text{ of } 500 + 150\% \text{ of } 160 = 60\% \text{ of } 1200 + \frac{1}{4} \text{ of } 720$$

- c)    d)

$$= 6\frac{1}{2} \text{ of } 200 - \frac{1}{3} \text{ of } 1200$$

- e)

138. What approximate value should come in place of the question mark (?) in the following equation?

$$1.542 \times 2408.69 + 1134.632 = ?$$

[BSRB Calcutta PO, 1999]

- a) 4600    b) 4800    c) 5200  
d) 6400    e) 3600

139. What approximate value should come in place of the question mark (?) in the following equation?

$$143\% \text{ of } 3015 + 1974 = 9500 - ?$$

[BSRB Calcutta PO, 1999]

- a) 3500    b) 3200    c) 4100  
d) 3800    e) 2800

140. What should come in place of the question mark (?) in

the following equation?

- $9568 - 6548 - 1024 = ?$  [BSRB Calcutta PO, 1999]  
 a) 2086      b) 4044      c) 2293  
 d) 1896      e) None of these

141. What should come in place of the question mark (?) in the following equation?

- $5978 + 6134 + 7014 = ?$  [BSRB Calcutta PO, 1999]  
 a) 19226      b) 16226      c) 19216  
 d) 19126      e) None of these

142. What approximate value should come in place of the question mark (?) in the following equation?

- $16\sqrt{524} + 1492 - 250.0521 = ?$  [BSRB Calcutta PO, 1999]  
 a) 1600      b) 1800      c) 1900  
 d) 2400      e) 1400

143. What should come in place of question mark (?)?

- $138.009 + 341.981 - 146.305 = 123.6 + ?$  [BSRB Hyderabad PO, 1999]  
 a) 210.85      b) 120.85      c) 220.085  
 d) 120.085      e) None of these

144. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following equation are exactly equal. You have to find out the part that is not equal to the other four. The number of that part is the answer.

$$\begin{aligned} 275 \times 12 - 15^2 + 5^3 &= 128 \times 5 - 5 \times 4^3 + 4^2 \times 3^2 \times 20 \\ \text{a)} &\quad \text{b)} \\ &= 350 \times 8 + 5^2 \times 4^2 = 175 \times 14 + 17 \times 7 + 90 \times 7 \\ \text{c)} &\quad \text{d)} \\ &= 182.5 \times 16 + 7 \times 2^3 \times 5 \\ \text{e)} & \end{aligned}$$

145. What should come in place of the question mark (?) in the following equation?

$$\frac{28}{?} = \frac{?}{112}$$

[BSRB Hyderabad PO, 1999]

a) 70      b) 56      c) 48  
 d) 64      e) None of these

146. What approximate value should come in place of the question mark?

$$48.25 \times 150 + 32 \times 16.5 - 125 \times 10.5 = ?$$

[BSRB Hyderabad PO, 1999]

a) 6200      b) 7500      c) 6450  
 d) 7100      e) 6700

147. What approximate value should come in place of the question mark (?) in the following equation?

$$31\% \text{ of } 3581 + 27\% \text{ of } 9319 = ?$$

[NABARD, 1999]

a) 2630      b) 3625      c) 2625  
 d) 3635      e) 3824

148. What value should come in place of the question marks (?) in the following equation?

$$48\sqrt{?} + 32\sqrt{?} = 320$$

- a) 16      b) 2      c) 4  
 d) 32      e) None of these

149. What should come in place of question mark (?) in the following equation?

$$36964 - 3(?) = 68344 - 8(5574)$$

[NABARD, 1999]

a) 5808      b) 4404      c) 4400  
 d) 13212      e) None of these

150. What should come in place of the question mark (?) in the following equation?

$$7\frac{1}{4} \times 4\frac{2}{3} + 7\frac{5}{6} \times 3\frac{1}{2} = ?$$

[NABARD, 1999]

- a)  $24\frac{2}{3}$       b)  $61\frac{1}{4}$       c)  $51\frac{3}{4}$   
 d)  $53\frac{5}{12}$       e) None of these

151. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following equation are exactly equal. You have to find out the part that is not equal to the other four. The number of that part is the answer.

[NABARD, 1999]

$$8362.64 + 768.3 - 190.57 = 593.38 + 604.7 + 7742.29$$

a)                  b)  
 $= 2235.925 \times 4 = 9931.04 - 990.67 = 17880.74 \div 2$   
 c)                  d)                  e)

152. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following equation are exactly equal. You have to find out the part that is not equal to the other four. The number of that part is the answer.

[BSRB Chennai PO, 2000]

$$\begin{aligned} \sqrt[3]{729} + \sqrt[2]{625} &= \sqrt{324} + \sqrt{256} = \sqrt[3]{216} \times \sqrt{81} - 40 \text{ of } \frac{1}{2} \\ \text{a)} &\quad \text{b)} \quad \text{c)} \\ &= \sqrt{441} + \sqrt[3]{2197} = \sqrt[3]{5832} + \sqrt[3]{2744} \\ \text{d)} &\quad \text{e)} \end{aligned}$$

153. What approximate value should come in place of the question mark (?) in the following equation?

$$6.39 \times 15.266 + 115.8 \text{ of } \frac{2}{5} = ?$$

[BSRB Chennai PO, 2000]

- a) 145      b) 165      c) 180  
 d) 130      e) 135

154. What should come in place of question mark (?) in the following equation?

$$8597 - ? = 7429 - 4358$$

[BSRB Chennai PO, 2000]

a) 5706      b) 5526      c) 5426  
 d) 5626      e) None of these

155. What approximate value should come in place of question mark (?) in the following equation?

$$857 \text{ of } 14\% - 5.6 \times 12.128 = ?$$

[BSRB Chennai PO, 2000]

- a) 48      b) 36      c) 60
- d) 52      e) 46

156. What should come in place of question mark (?) in the following equation?

$$1500 \text{ of } 45\% + 1700 \text{ of } 35\% = 3175 \text{ of } ?\%$$

[BSRB Chennai PO, 2000]

- a) 50      b) 45      c) 30
- d) 35      e) None of these

157. What should come in place of question mark (?) in the following equation?

$$\frac{5}{5} \div 3 \frac{11}{15} + 5 \frac{1}{2} = ?$$

[BSRB Chennai PO, 2000]

- a) 7      b)  $8\frac{1}{2}$       c)  $7\frac{1}{2}$
- d)  $6\frac{1}{2}$       e) None of these

158. What approximate value should come in the place of question mark (?) in the following equation?

$$1325\sqrt{17} + 508.24 \text{ of } 20\% - 85.39 \text{ of } \frac{3}{4} = ?$$

[BSRB Chennai PO, 2000]

- a) 5500      b) 5200      c) 5800
- d) 4900      e) 5900

**Directions (Q. 159-163):** Find out the approximate value which should come in place of the question mark in the following questions. (You are not expected to find the exact value.)

159.  $\sqrt{45689} = ?$

[BSRB Bhopal PO, 2000]

- a) 180      b) 415      c) 150
- d) 210      e) 300

160.  $\frac{(10008.99)^2}{10009.001} \times \sqrt{3589} \times 0.4987 = ?$

[BSRB Bhopal PO, 2000]

- a) 3000      b) 300000      c) 3000000
- d) 5000      e) 9000000

161.  $399.9 + 206 \times 11.009 = ?$

[BSRB Bhopal PO, 2000]

- a) 2800      b) 6666      c) 4666
- d) 2400      e) 2670

162.  $\frac{2}{5} + \frac{7}{8} \times \frac{17}{19} \div \frac{6}{5} = ?$

[BSRB Bhopal PO, 2000]

- a) 1      b)  $\frac{1}{2}$       c)  $2\frac{1}{2}$
- d)  $\frac{3}{4}$       e)  $\frac{9}{11}$

163.  $(299.99999)^3 = ?$  [BSRB Bhopal PO, 2000]

- a) 27000000      b) 9000000000      c) 180000
- d)  $2.7 \times 10^9$       e) 2700000

164. If  $x = 9$  then what will be the value of following expression?

$$\frac{20x^3 + 12x + 3 + 5x^2}{10x^3 + 3 + 5x^2 + 6x}$$

- a)  $1\frac{18}{19}$       b)  $\frac{188}{969}$       c)  $1\frac{88}{89}$

- d) Cannot be determined      e) None of these

165. Four of the five parts numbered (a), (b), (c), (d) and (e) in the following equation are exactly equal. You have to find out the part that is not equal to the other four. The number of that part is the answer.

[BSRB Delhi PO, 2000]

$$10.36 + 69.802 + 24.938 + 2207.1 \div 21 = 16\frac{2}{3}\% \text{ of } 630.6$$

- a)      b)      c)

$$= 32.84375 \times 3.2 = \frac{1}{5} \text{ of } \frac{1}{9} \text{ of } 4729.4$$

- d)      e)

166. What approximate value should come in place of question mark (?) in the following equation?

$$33\frac{1}{3}\% \text{ of } 768.9 + 25\% \text{ of } 161.2 - 68.12 = ?$$

[BSRB Delhi PO, 2000]

- a) 230      b) 225      c) 235
- d) 220      e) 240

167. What should come in the place of question mark (?) in the following equation?

$$8265 + 2736 + 41320 = ?$$

- a) 51321      b) 52231      c) 52321
- d) 52311      e) None of these

168. What should come in the place of the question mark (?) in the following equation?

$$\frac{(7 \times ?)^2}{49} = \sqrt{81}$$

- a) 9      b) 2      c) 3
- d) 4      e) None of these

169. What should come in place of the question mark (?) in the following equation?

$$47^{7.5} \div 47^{\frac{3}{2}} \times 47^{-3} = (\sqrt{47})^?$$

- a) 3      b)  $2\frac{1}{2}$       c) 6
- d) 3.5      e) None of these

170. Which of the following will come in place of both the question marks (?) in the following equation?

$$\frac{128 \div 16 \times ? - 7 \times 2}{7^2 - 8 \times 6 + ?^2} = 1$$

- a) 17      b) 16      c) 18  
d) 14      e) 3

171. What approximate value should come in place of the question mark (?) in the following equation?

$$39.05 \times 14.95 - 27.99 \times 10.12 = (36 + ?) \times 5$$

a) 22      b) 29      c) 34  
d) 32      e) 25

### Answers

- |          |          |         |
|----------|----------|---------|
| 1. (i) b | (ii) a   | (iii) c |
| (iv) a   | (v) c    | (vi) d  |
| (vii) a  | (viii) d | (ix) a  |
| (x) d    | (xi) c   |         |
| 2. (i) b | (ii) a   | (iii) c |
| (iv) b   | (v) a    | (vi) b  |
| 3. (i) a | (ii) b   | (iii) c |
| (iv) d   | (v) a    |         |
| 4. (i) b | (ii) c   | (iii) a |
| (iv) a   | (v) b    | (vi) c  |
| (vii) d  |          |         |
| 5. b     | 6. b     |         |

7. a; Hint: Here  $175 \times 1.24 = 1.75 \times 124 = 217$ .  
8. b 9. a 10. d

11. d; Hint:  $\frac{3420}{19} = \frac{x}{0.01} \times 7$

$$\therefore x = \frac{3420}{19} \times \frac{0.01}{7} = \frac{9}{35}$$

12. b; Hint:  $\frac{122.76}{15.50} = \frac{12276}{1550} = \frac{12276}{155} \times \frac{1}{10} = \frac{79.2}{10} = 7.92$

13. d 14. d

15. d; Hint:  $12 \div 0.09$  of  $0.3 \times 2 = 12 \div 0.027 \times 2$

$$= \frac{12000}{27} \times 2 = \frac{8000}{9}$$

16. b 17. b 18. c 19. d

20. a; Hint:  $\sqrt{\frac{0.289}{0.00121}} = \sqrt{\frac{0.28900}{0.00121}} = \sqrt{\frac{28900}{121}} = \frac{170}{11}$

21. b 22. d 23. c 24. a 25. b 26. c 27. a  
28. c 29. b 30. a

31. (a)  $\frac{15}{19}$  (b)  $\frac{8}{9}$  (c)  $\frac{20}{21}$  (d)  $\frac{13}{17}$  (e)  $\frac{20}{23}$  32. c 33. e

34. b 35. a 36. e 37. b 38. b 39. a 40. c  
41. c 42. a 43. c 44. a 45. c

46. b;  $12833 + 133\% \text{ of } 1655 - \frac{7}{5} \text{ of } 3533 = ?$

$$? = 12833 + 133\% \text{ of } 1655 - \frac{7}{5} \text{ of } 3533$$

$$= 12833 + 1655 \times \frac{133}{100} - 3533 \times \frac{7}{5}$$

$$= 12833 + 2201.15 - 4946.20$$

$$= 10087.95 = 10000$$

47. b	48. c	49. d	50. c	51. c	52. a	53. b
54. c	55. c	56. c	57. a	58. d	59. c	60. a
61. a	62. d	63. a	64. b	65. b	66. c	67. b
68. b	69. e	70. a	71. a	72. c	73. b	74. a
75. c	76. c	77. c	78. b	79. b	80. c	81. c
82. d	83. b	84. c	85. c	86. b	87. d	88. d
89. a	90. b	91. c	92. e	93. c	94. e	95. b

96. a;  $66 \frac{2}{3}\% \text{ of } ? = 32.78 \times 18.44$

or,  $\frac{2}{3} \text{ of } ? \approx 30 \times 20 \text{ or, } ? = \frac{600 \times 3}{2} = 900$

97. e

98. e;  $85.147 + 34.912 \times 6.2 + ? = 802.293$

or,  $? = 802.293 - 85.147 - 34.912 \times 6.2$

$$\approx 800 - 85 - 35 \times 6 \approx 500$$

99. b;  $9548 + 7314 = 8362 + ?$

$$\text{or, } ? = 9548 + 7314 - 8362 = 8500$$

100. d;  $17 \frac{2}{3} \text{ of } 180 + \frac{1}{4} \text{ of } 480 = ?$

or,  $? = \frac{53}{3} \text{ of } 180 + \frac{1}{4} \text{ of } 480 = 3180 + 120 = 3300$

101. a;  $248.251 \div 12.62 \times 20.52 = ?$

$$\text{or, } ? \approx 240 \div 12 \times 20 = 20 \times 20 = 400$$

102. b; The other parts are equal to 1000.

103. c; The other parts are equal to 200.

104. d;  $? \approx 6.6 \times 1080 + 2560 - 1700 \approx 7128 + 860 \approx 8000$

105. c; Others equal 80 whereas (c) equals 80.8.

106. c;  $? = 5679 + 1438 - 2015 = 5102$

107. a;  $? \approx 160\% \text{ of } 6530 + 5.5 \times 1010 - 5965$

$$\approx 10448 + 5555 - 5965 \approx 10000$$

108. b; Others are equal to 144 whereas (b) equals 1440.

109. d

110. e;  $? = 8697.32 - 3058.16 - \frac{92}{5} \times 150.8$

$$= 5639.16 - 2774.72 = 2864.44$$

111. d;  $? \approx \frac{18}{5} \times 160 + \frac{40}{100} \times 1850 + 450$

$$\approx 576 + 740 + 450 \approx 1760 \approx 1800$$

112. d;  $? \sqrt{?} = 24 \times 72$ ; Squaring both the sides,

$$\begin{aligned} (?^2 \times ?) = ?^3 &= (8 \times 3) \times (8 \times 3) \times (8 \times 9) \times (8 \times 9) \\ &= (8 \times 2^3 \times 8^3 \times 9^3) \quad \therefore ? = 2 \times 8 \times 9 = 144 \end{aligned}$$

113. e;  $42 \times 21 = 880$ or,  $(42 \times 21 - 882 - 880) / 2 = 12?$ Now, by trial, (1)  $\rightarrow 12 \div 3 = 4 \neq 2$ (2)  $\rightarrow 12 \times 2 = 24 \neq 2;$ (3)  $\rightarrow 12 - 2 = 10 \neq 2$ (4)  $\rightarrow 12 + 3 = 15 \neq 2;$ 

∴ answer is (5).

114. b;  $36 + 12 = 48$ Now, by trial 1  $\rightarrow 36 + 12 \div 3 \times 2 = 44 \neq 48$ 2  $\rightarrow 36 + 12 \div 3 \times 3 = 48$ 115. c;  $48? + 12 \times 4 = 80$ Now, by trial 1  $\rightarrow 48 \div 2 \times 3 + 48 = 120 \neq 80$ 2  $\rightarrow 48 + 3 \div 3 + 48 = 97 \neq 80$ 3  $\rightarrow 48 \times 2 \div 3 + 48 = 120$ 

116. d

117. a;  $(48 + 9) \div 19 \times 2 = 12?$ or,  $57 \div 19 \times 2 = 12?$ or,  $3 \times 2 = 12? = 12 \div 3 + 2 = 6$ 

$$118. e; ? = \frac{41}{6} \times \frac{16}{3} + \frac{53}{3} \times \frac{9}{2} = \frac{41 \times 16 + 53 \times 9 \times 3}{6 \times 3}$$

$$= \frac{656 + 1431}{18} = \frac{2087}{18} = 115 \frac{17}{18}$$

$$119. e; ? \approx 5 \times 230 + 3000 + 2150 \left( \frac{1596}{7} = 228 \right)$$

$$= 1150 + 3000 + 2150 = 6300$$

120. d;  $? = 5798 + 4632 - 7385 = 3045$ 

121. c; (c) = 605.5 whereas the other parts are equal to 600.5

122. e;  $152\sqrt{?} \approx 8200 - 3500 - 800 = 3900$ 

$$\therefore \sqrt{?} = \frac{3900}{152} = \text{slightly less than } \left( \frac{4000}{150} = \right) 26.67$$

i.e. 26

$$\therefore ? = (26)^2 = 676 \approx 675$$

123. e; Others are equal to 30.

$$124. b; ? = \frac{2620 - 256}{197} = 12$$

125. c;  $? \approx 285 + 1895 - 655 - 745$  or,  $? = 780$ 

126. d; Others equal 5650.

$$127. e; ? = (27 + 118 - 32 - 11) + \left( \frac{3}{11} + \frac{2}{5} - \frac{5}{22} - \frac{6}{11} \right)$$

$$\text{or, } ? = 102 + \left( \frac{30 + 44 - 25 - 60}{110} \right)$$

$$\text{or, } ? = 102 - \frac{1}{10} = 101 \frac{9}{10}$$

128. e

$$129. d; ? = ? = \frac{21}{25} \times \frac{20}{9} \times \frac{5}{12} \times \frac{17}{10} = \frac{119}{90} = 1 \frac{29}{90}$$

$$130. e; ? = 48845 + \frac{51246}{6} = 48845 + 8541 = 57386$$

$$131. e; ? = \frac{45 \times 45 \times 27 \times 27}{135 \times 135} = 81$$

$$132. b; ? = \frac{9}{2} \times \frac{13}{3} - \frac{25}{3} \times \frac{3}{17}$$

$$= \frac{39}{2} - \frac{25}{17} = \frac{663 - 50}{34} = \frac{613}{34} = 18 \frac{1}{34}$$

133. d; Others are equal to 865.67.

$$134. c; ? = \frac{9}{100} \times 64 + \frac{32}{100} \times 90 = 34.56 \approx 35$$

135. e; Others are equal to 301.82.

136. d;  $? \approx 8.6 + 4 \times 6.5 \approx 35$ 

137. c; Others are equal to 900

138. b;  $? \approx 3700 + 1100 = 4800$ 139. b;  $? \approx 9500 - 4300 - 2000 = 3200$ 140. e;  $? = 9568 - 6548 - 1024 = 1996$ 141. d;  $? = 5978 + 6134 + 7014 = 19126$ 142. a;  $? \approx 16 \times 23 + 1475 - 250 \approx 1600$ 143. e;  $? = 138.009 + 341.981 - 146.305 - 123.60$ 

$$\therefore ? = 210.085$$

144. d; Others are equal to 3200 whereas (d) = 3199

$$145. b; \frac{28}{?} = \frac{?}{112} \quad \therefore ? = \sqrt{28 \times 112} = 56$$

146. c

$$147. b; ? = 31\% \text{ of } 3581 + 27\% \text{ of } 9319 \\ = 1110.11 + 2516.13 \approx 3625$$

$$148. a; 48\sqrt{?} + 32\sqrt{?} = 320 \quad \text{or, } \sqrt{?} = \frac{320}{80} = 4 \quad \therefore ? = 16$$

$$149. b; 36964 - 3(?) = 68344 - 8(5574)$$

$$\text{or, } 36964 - 3(?) = 68344 - 44592$$

$$\text{or, } 36964 - 23752 = 3(?) \quad \text{or, } ? = 4404$$

$$150. b; 7 \frac{1}{4} \times 4 \frac{2}{3} + 7 \frac{6}{5} \times 3 \frac{1}{2} = ? \quad \text{or, } ? = \frac{29}{4} \times \frac{14}{3} + \frac{47}{6} \times \frac{7}{2}$$

$$= \frac{406}{12} + \frac{329}{12} = \frac{735}{12} = \frac{245}{4} = 61 \frac{1}{4}$$

151. c; The other parts are equal to 8940.37.

152. e; The other parts are equal to 34.

$$153. a; ? = 6.39 \times 15.266 + 115.8 \text{ of } \frac{2}{3}$$

$$\approx 6.50 \times 15 + 115 \times 0.4 = 97.50 + 46 \approx 145$$

154. b;  $8597 - ? = 7429 - 4358$

or,  $8597 - ? = 3071 \therefore ? = 8597 - 3071 = 5526$

155. d;  $? = 857 \text{ of } 14\% - 5.6 \times 12.128$

$\approx 857 \text{ of } 14\% - 5.6 \times 12 \approx 120 - 67 \approx 52$

156. e; 1500 of 45% of 1700 of 35% = 3175 of ?%

$= ? \text{ of } 3175 = 1500 \text{ of } 45 + 1700 \text{ of } 35 = 67500 + 59500$

$$\text{? of } 3175 = 127000 \therefore ? = \frac{127000}{3175} = 40$$

157. a;  $? = 5\frac{3}{5} \div 3\frac{11}{15} + 5\frac{1}{2} = \frac{28}{5} \div \frac{56}{15} + \frac{11}{2}$

$$= \frac{28}{5} \times \frac{15}{56} + \frac{11}{2} = \frac{3}{2} + \frac{11}{2} = \frac{14}{2} = 7$$

158. a;  $? = 1325\sqrt{17} + 508.24 \text{ of } 20\% - 85.39 \text{ of } \frac{3}{4}$

$1325\sqrt{17} + 500 \text{ of } 20\% - 85 \times 0.75$

$5460 + 100 - 60 = 5500$

159. d;  $? = \sqrt{45689} = 213.75 \approx 210$

160. b;  $? = \frac{(10008.99)^2}{10009.001} \times \sqrt{3589} \times 0.4987$

$$\approx (10009)^2 \times \sqrt{3600} \times 0.50$$

$= 10009 \times 60 \times 0.50 \approx 300000$

161. e;  $? = 399.9 + 206 \times 11.009 \approx 400 + (200 + 6) \times 11$

$= 400 + 2200 + 66 \approx 2670$

162. a;  $? = \frac{2}{5} + \frac{7}{8} \times \frac{17}{19} \div \frac{6}{5}$

$$= \frac{2}{5} + \frac{7}{8} \times \frac{17}{19} \times \frac{5}{6} = \frac{2}{5} + \frac{595}{912} \approx 0.40 + 0.60 = 1.0$$

163. a;  $? = (299.99999)^3 \approx (300)^3 = 27000000$

164. a; Given expression is  $\frac{20x^3 + 12x + 3 + 5x^2}{10x^3 + 3 + 5x^2 + 6x}$

$$= \frac{(20x^3 + 12x) + (3 + 5x^2)}{(10x^3 + 5x^2) + (3 + 6x)} = \frac{4x(5x^2 + 3) + 1(3 + 5x^2)}{5x^2(2x + 1) + 3(2x + 1)} \\ = \frac{(5x^2 + 3)(4x + 1)}{(2x + 1)(5x^2 + 3)} = \frac{4x + 1}{2x + 1} = 1\frac{18}{19}$$

165. e; The other parts are equal to 105.10.

166. a;  $? = 33\frac{1}{3}\% \text{ of } 768.9 + 25\% \text{ of } 161.2 - 68.12$

$$= \frac{1}{3} \text{ of } 768.9 + \frac{1}{4} \text{ of } 161.2 - 68.12 \\ = 256.3 + 40.3 - 68.12 \approx 230$$

167. c  
170. e

168. c  
171. e

169. c

### Exercise

1. Simplify

$$\frac{1}{2} + \frac{1}{3} + \frac{1}{4}$$