

Answer Key

1. $\frac{21}{2}$
 $10 \times 2 + 1 = 21$
2. $\frac{47}{9}$
 $5 \times 9 + 2 = 47$
3. $\frac{45}{11}$
 $4 \times 11 + 1 = 45$
4. $\frac{26}{5}$
 $5 \times 5 + 1 = 26$
5. $\frac{25}{6}$
 $4 \times 6 + 1 = 25$
6. $\frac{47}{6}$
 $7 \times 6 + 5 = 47$
7. $\frac{19}{8}$
 $2 \times 8 + 3 = 19$
8. $\frac{56}{9}$
 $6 \times 9 + 2 = 56$
9. $\frac{43}{10}$
 $4 \times 10 + 3 = 43$
10. $\frac{56}{11}$
 $5 \times 11 + 1 = 56$
11. 7
12. 9
13. 4
14. 6
15. 4
16. 5
17. 6
18. 9
19. 8
20. 9
21. $9\frac{2}{3}$
 $29 \div 3 = 9 \text{ r } 2$
22. $10\frac{1}{3}$
 $31 \div 3 = 10 \text{ r } 1$
23. $10\frac{2}{3}$
 $32 \div 3 = 10 \text{ r } 2$
24. $4\frac{3}{4}$
 $19 \div 4 = 4 \text{ r } 3$
25. $7\frac{1}{4}$
 $29 \div 4 = 7 \text{ r } 1$
26. $3\frac{4}{5}$
 $19 \div 5 = 3 \text{ r } 4$
27. $6\frac{1}{5}$
 $31 \div 5 = 6 \text{ r } 1$
28. $7\frac{1}{6}$
 $43 \div 6 = 7 \text{ r } 1$
29. $2\frac{3}{10}$
 $23 \div 10 = 2 \text{ r } 3$
30. $5\frac{9}{10}$
 $59 \div 10 = 5 \text{ r } 9$
31. {1, 7, 49}
32. {1, 5, 11, 55}
33. {1, 3, 17, 51}
34. {1, 3, 19, 57}
35. {1, 2, 4, 13, 26, 52}
36. {1, 2, 4, 7, 8, 14, 28, 56}
37. {1, 2, 3, 4, 6, 8, 12, 16, 24, 48}
38. {1, 2, 3, 6, 9, 18, 27, 54}
39. {1, 2, 5, 10, 25, 50}
40. {11, 13, 17, 19, 23, 29}
41. 108
42. 12
43. 108
44. 2
45. 120
46. 5
47. 240
48. 98
49. 30
50. 144
51. 72
52. 2
53. 132
54. 360
55. 130
56. 3
57. 46
58. 172
59. 108

MAP 230 (T2) Issue 7

60. 160
61. $1\frac{4}{9}$
62. $\frac{1}{7}$
63. $1\frac{5}{9}$
64. $\frac{2}{5}$
65. $1\frac{1}{10}$
66. $\frac{3}{10}$
67. $1\frac{3}{8}$
68. $\frac{3}{4}$
69. $1\frac{4}{8}$
70. $1\frac{5}{9}$
71. $12:00 - 7:30 = 4:30$ or 4.5 hours
 $6 \times 4.5 = \$27$
72. $30 \times 2 = 60$
 $2 \times 60 = \underline{\$120}$
73. $\frac{3}{30} = \frac{1}{10} = 1/10$
74. $1 - \frac{1}{3} = \frac{2}{3}$
 $15 \times \frac{2}{3} = 10$
75. $6 \times 12\frac{1}{2} = 75$
 $75 \div 5 = 15$ ounces
76. $18 \times 5\text{¢} = 90\text{¢}$
 $150 - 90 = 60$
 $60 \div 2 = \underline{30\text{¢}}$
77. $\frac{1}{2}(26) + 4 = 17$
 $26 - 17 = 9$
78. $4.5 \times 16 = \$72$
79. $9 \times 31 = \underline{279}$
80. $5 - 2.9 = 2.1$
 $2.1 \div 7 = 0.3$
 $5 - 3 \times 0.3 = \$4.10$
81. $35 + 3 = 38$
 $2 \times 38 = \underline{76}$
82. C
Think about 12 hot dogs
C: $2 \times 4 = \$8$ ✓
D: $3 \times 3 = \$9$
E: $4.25 \times 2 = \$8.50$
83. $46 = 25 + 20 + 1$
 $= 1 \text{ quarter} + 2 \text{ dimes} + 1 \text{ penny}$
Ans = 4 coins
84. 22
85. $\frac{1}{3} \times 600 = 200$
 $600 - 200 = \underline{400}$
86. $24 \div 3 \times 2 = 16$
87. $2 \times 12 = 24$ inches
88. $5 \times 12 + 10 = 70$ inches
89. $\frac{1}{3} \times 12 = 4$
 $12 - 4 = 8$
90. 320 (Double each time.)

Answer Key

- | | |
|-------------------|---------------------|
| 1. 60 | 36. 6.5 |
| 2. 80 | 37. 8.5 |
| 3. 5 | 38. 7.5 |
| 4. 6 | 39. 2.25 |
| 5. 50 | 40. 10.5 |
| 6. 4 | 41. 9.5 |
| 7. 0.04 | 42. 5.25 |
| 8. 9 | 43. 2.75 |
| 9. 50 | 44. 8.5 |
| 10. 30 | 45. 5.25 |
| 11. 3.6 | 46. $1\frac{3}{4}$ |
| 12. 2.4 | 47. $7\frac{1}{2}$ |
| 13. 0.56 | 48. $5\frac{3}{4}$ |
| 14. 3 | 49. $6\frac{1}{4}$ |
| 15. 1.8 | 50. $5\frac{1}{4}$ |
| 16. 3.2 | 51. $10\frac{1}{4}$ |
| 17. 2.8 | 52. $1\frac{3}{8}$ |
| 18. 1.6 | 53. $3\frac{5}{8}$ |
| 19. 4.2 | 54. $5\frac{7}{8}$ |
| 20. 4.9 | 55. $4\frac{7}{8}$ |
| 21. $\frac{1}{2}$ | 56. 50 |
| 22. $\frac{1}{5}$ | 57. 7.5 |
| 23. $\frac{3}{5}$ | 58. 0.9 |
| 24. $\frac{2}{7}$ | 59. 0.32 |
| 25. $\frac{5}{7}$ | 60. 0.68 |
| 26. $\frac{6}{7}$ | 61. $\frac{1}{6}$ |
| 27. $\frac{2}{5}$ | 62. 0.9 |
| 28. $\frac{2}{3}$ | 63. 180 |
| 29. $\frac{7}{8}$ | 64. 100 |
| 30. $\frac{2}{9}$ | 65. .03 |
| 31. $\frac{8}{9}$ | 66. .04 |
| 32. $\frac{4}{5}$ | 67. 81 |
| 33. $\frac{1}{3}$ | 68. 25 |
| 34. $\frac{3}{7}$ | 69. 140 |
| 35. $\frac{3}{8}$ | 70. 400 |
| | 71. 20 |
| | 72. 80 |

MAP 240 (T2) Issue 7

73. 3×5^3

$$\begin{array}{r} 3 \overline{) 375} \\ 5 \overline{) 125} \\ \quad 5 \overline{) 25} \\ \qquad 5 \end{array}$$

$375 = 3 \times 5 \times 5 \times 5 = 3 \times 5^3$

74. 18

75. C

76. D

77. D

78. B

79. B

80. C

81. B

82. D

83. 85

84. B

85. B

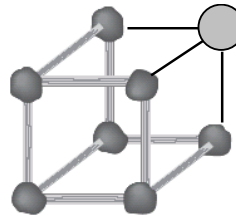
86. D

87. C

88. A

89. D

90. C



91.

92. 12

93. C

94. C

95. D

96. 1024

97. $70\%(\mathbf{120}) = 84$

or

$84 \div 0.7 = 120$

98. $30\% \times 120 = 36$

99. $72 \times \frac{5}{6} = 60$

100. $10000 \times 20\% = 2000$

$10000 + 2000 = 12,000$

101. $184 \div 8 = 23$ (miles)

102. $105 = 3 \times 5 \times 7$

$5 \times 7 = 35$

103. (a) $36 \div \frac{4}{5} = 36 \times \frac{5}{4} = 45$

D)

(b) $45 \div \frac{3}{4} = 45 \times \frac{4}{3} = 60$ (G)

104. 15

105. $\frac{18}{8} = \frac{9}{4} = \frac{81}{x}$
 $x = 36$

Answer Key

1. $2/9$
2. $\frac{5}{6} \times 24 = 20 = 20$
3. $1\frac{5}{6}$
4. $6 \times \frac{4}{30} = \frac{4}{5}$
5. $12 \times 5 / 36 \times 6 = 10$
6. 56
7. 10
8. 6
9. 72
10. 13
11. 4.8
12. 2
13. 37.5
14. 8
15. 38
16. 84
17. 24
18. 81
19. 20%
20. 40%
21. 50%
22. 70%
23. 40%
24. 16
25. 160
26. 40
27. 50
28. 100
29. 60
30. 15%
31. 575%
32. 405%
33. 187.5%
34. 237.5%
35. 362.5%
36. $\frac{1}{4}$
37. $\frac{1}{2}$
38. $\frac{3}{8}$
39. $\frac{3}{4}$
40. $\frac{5}{8}$
41. $\frac{6(\text{arrows})}{22(\text{min.})} = \frac{9(\text{arrows})}{\Delta(\text{min.})}$
 $9 \times 22 = 198 = 6 \times \Delta$
 $\Delta = 33$
42. $700 + 700 \times 20\% = 700 + 140 = 840$
43. $2 \times 5 \times 3 = 30 \text{ in}^3$
44. $2(2 \times 3 + 3 \times 5 + 5 \times 2) = 2 \times 31 = 62 \text{ in}^2$
45. $2\frac{2}{3} \times 60 = 120 + 40 = 160 \text{ (min)}$
46. B
 $30 \div 5 = 6 \text{ min per arrow (A)}$
 $20 \div 5 = 4 \text{ min per arrow (B, faster)}$
47. $25 \times (1 - \frac{2}{5}) = 15$
48. 176%
49. The first digit for a 4-digit number cannot be a 0.
The last digit for a 5-multiple should be either 0 or 5. Thus, there are $9 \times 10 \times 10 \times 2 = 1800$ of them.
50. $24 \times 10\% = 24 \times 0.1 = \2.40
51. $150 \div 2 = 75$
 $6 \div 2 = 3$
 $75 + 3 = 78$
52. $\frac{1}{5} = 1/5$
53. $3 \times 3 = 9$ combinations
54. $56 \div 80 = 0.7 = 70\%$
55. $30 \div 2 = \$15$
56. D
57. C
58. $40 \times 15\% = \$6$
59. $40 - 40 \times 25\% = 40 - 10 = \30
60. D
 $6 \times 3.5 = 21$
 $48 - 21 = 27$
61. 0.008
62. $.0004 \times 10 = 0.004$
63. .7
64. .006
65. 39
66. $20 \div \frac{2}{5} = 50$
67. 2.1
68. 300
69. 78
70. $\frac{1}{20}$
71. 304
72. $.4 \times 250 = 100$

MAP 250 (T2) Issue 7

73. 102000
74. 600
75. $5 \div 20 = 0.25 = 25\%$
76. 1011
77. 98
78. 183
79. {1, 2, 4, 8, 16, 32, 64}
80. $\Delta = 3$
81. C
82. 180 (carrots)
 $3 \times 3 = 9$
 $9 \times 20 = 180$
83. 12 (yards) = 3×4
84. It is possible. For instance if Sean's garden is 1×7 yd, then the garden has an area of 7 sq. yd, resulting in smaller area.
85. $21 - 9 = 12$
 $12 \div 2 = 6$
 $6 + 4 = \boxed{10}$
86. $\frac{1}{6}$
87. Any one of the following numbers: 2155, 4225, 4270, 6340, or 8410
88. C
89. B
90. C
91. C
92. D
93. C
94. B
95. A
96. C
97. B
98. A
99. D
100. C

Answer Key

1. 4
2. $5 \times (\frac{1}{3} - \frac{1}{4} + \frac{1}{5}) - \frac{1}{6} = 5 \times \frac{17}{60} - \frac{1}{6} = \frac{15}{12} = 1\frac{1}{4}$
3. $\frac{16}{9} = 1\frac{7}{9}$
4. $\frac{47}{180} = 47/100$
5. $\frac{3}{7} = 3/7$
6. $\frac{1}{6} = 1/6$
7. $\frac{2}{5} \times 20 = 8$
8. $1\frac{1}{5} = 1\frac{1}{5}$
9. $\frac{1}{3}(15\frac{7}{12}) = 5\frac{7}{36} = 5\frac{7}{36}$
10. $72 \div 120 = .6 = 60\%$
11. 585
12. 740
13. $3\frac{1}{3} = 3\frac{1}{3}$
14. $1 + \frac{1}{2 + \frac{1}{3 + \frac{1}{4}}} = 1 + \frac{1}{2 + \frac{1}{\frac{13}{4}}} = 1 + \frac{1}{2 + \frac{4}{13}} = 1 + \frac{1}{\frac{30}{13}} = 1 + \frac{13}{30} = 1\frac{13}{30}$
15. $2\frac{2}{3} + 3\frac{3}{4} - 5\frac{1}{10} = \frac{2}{3} + \frac{3}{4} - \frac{1}{10} = 1\frac{19}{60} = 1\frac{19}{60}$
16. $1/7$
17. .1222...
18. 65
19. 12
20. 14
21. $4/9$
22. $8/18 = 4/9$
23. 343 Since $7 \times 7 \times 7 = 343$.
24. 210 Since $7 \times 6 \times 5 = 210$.
25. 7 Since 111, 222, 333, 444, 555, 666, and 777 are the numbers with 3 repetitions.
26. 126 Think of the 3-digit number has 1 as the non-repeated digit, so it must be $\boxed{xx1}$, $\boxed{x1x}$, and $\boxed{1xx}$, where x is a digit chosen from {2,3, 4, 5, 6, 7}. There are $6 \times 3 = 18$ such numbers. Similarly, there are $\boxed{xx2}$, $\boxed{x2x}$, $\boxed{2xx}$

xx3	x3x	3xx
xx4	x4x	4xx
xx5	x5x	5xx
xx6	x6x	6xx
xx7	x7x	7xx

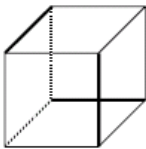
 Thus, there are 18×7 such 2-repetition numbers.
27. $343 = 210 + 7 + 126$.
28. $10 \times 10 \times 10 \times 10 \times 26 \times 26 = 676,0000$
29. $10 \times 10 \times 10 \times 10 \times 26 \times 26 = 676,0000$
30. There are four outcomes: HH, HT, TH, and TT.
31. The outcome is HH, so the probability is $\frac{1}{4}$.
32. The outcome is TT, so the probability is $\frac{1}{4}$.
33. The outcomes are HT and TH, so the probability is $\frac{2}{4} = \frac{1}{2}$.
34. The outcome is TT, so the probability is $\frac{1}{4}$.
35. The outcomes are TT, HT, and TH, so the probability is $\frac{3}{4}$.
36. The outcome is HHH, so the probability = $\frac{1}{8}$. Note that there are 8 outcomes in total.
37. The outcome is TTT, so the probability is $\frac{1}{8}$.
38. The outcomes with two heads and one tail are HHT, HTH, and THH. There are 3 of them, thus the probability is $\frac{3}{8}$.
39. The outcome without tail is HHH, so the probability is $\frac{1}{8}$.
40. The outcomes with at least a tail are THH, HTH, HHT, TTH, THT, TTH, and TTT. There are 7 of them, thus the probability is $\frac{7}{8}$.
41. $P = 2R$
 $R = 3S$
 $P:R:S = 6:3:1$
 $(P+S):R = 7:3$
 $R = \frac{2}{7} \times 140 = \60
42. C
 $3 + 5 = 8$
 $8 \div 3 = 2\frac{2}{3}$
 $3 - 2\frac{2}{3} = \frac{1}{3}$ (contribution from the first fisherman)
 $5 - 2\frac{2}{3} = 2\frac{1}{3}$ (contribution from the second fisherman)
 $\frac{1}{3} : 2\frac{1}{3} = 1:7$
 \$1 to the first, and \$7 to the second fisherman.
43. $20\% = \frac{1}{5} = 1:5$
 boys:girls = 1:5
 boys = $\frac{1}{6}$
 girls = $\frac{5}{6}$
 $\frac{5}{6}(30) = 25$ (girls)
44. $72 \div 3 = 24$
 $96 \div 24 = 4$ (gal)
 $18 \times \frac{4}{5} = \14.40
45. $3.25 \div 0.25 = 13$
 $13 \times 50 = 650 = 10 \text{ min \& } 50 \text{ sec}$

MAP 270 (T2) Issue 7

46. 1 foot = 12 inches
8 feet = 96 inches
 $96 \div 10 = 9.6$ (hr)
 $8 \div 3 = 2R2$
 $30 \times 2 = 60$ min = 1 hr (Charlie rests twice.)
 $9.6 + 1 = 10.6 = 10$ hr & 36 min
47. $\frac{3}{4} \times 72 = 54$ (one way)
 $54 \times 2 = 108$ (round trip)
 $\frac{108}{2\frac{1}{4}} = 48$ mph
48. 1 foot = 12 inches
8 feet = 96 inches
 $96 \div 10 = 9.6$ (hr)
 $8 \div 3 = 2R2$
 $30 \times 2 = 60$ min = 1 hr (Charlie rests twice.)
 $9.6 + 1 = 10.6$ hr = 10 hr 36 min
49. $1\frac{1}{3} = \frac{4}{3}$
 $(\frac{4}{3})^3 = \frac{64}{27} = 64/27$
50. A
 $5 + 3 = 8$ (points won by Mary)
 $8 \div 2 = 4$ (games won by Mary)
 $4 + 3 = 7$ (total games)
51. D
 $1 + 2 + 1 = 4 = 2^2$
 $1 + 2 + 3 + 2 + 1 = 9 = 3^2$
 $1 + 2 + 3 + 4 + 5 + \dots + 15 + 14 + 13 + \dots + 3 + 2 + 1 = 15^2$
52. See the table below.

Sleep	School	Home work	Activities
8	6	3	7
$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{7}{24}$
33.3%	25%	12.5%	29.2%

53. B
If the heavy black lines represent the color red, every face will have exactly one red edge. So the smallest number of red edges is 3.

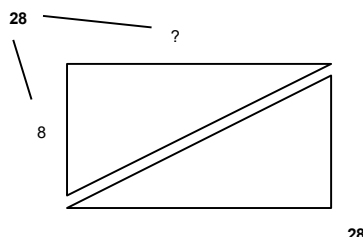


54. $25^2 = 20^2 + 15^2$
55. $6 \times 5 \div 2 = 15$ chords
56. C
 $1 - 20\% = 0.8$
2nd time: $0.8 \times 0.8 = 0.64$
3rd time: $0.8 \times 0.64 = 0.512$
4th time: $0.8 \times 0.512 = 0.4096$

57. $60 + 60 \times 5\% = 60 + 3 = \63
58. $\frac{500000}{100} \times 0.36 \times 5$
 $= 5000 \times 0.36 \times 5$ (cancellation)
 $= 50 \times 36 \times 5$ (moving decimal)
 $= 10 \times 180 \times 5$
 $= 1800 \times 5$
 $= \$9000$
59. (a) $0.2 \times 12,000 = 2,400$
(b) $12,000 + 2,400 = 14,400$
60. $120 \times (1 - 0.2) = \$96$
61. -125
62. $\sqrt{1\frac{2}{3} \times 3\frac{3}{4}} = \sqrt{\frac{5}{3} \times \frac{15}{4}} = \sqrt{\frac{25}{4}} = \frac{5}{2} = 2\frac{1}{2}$
63. -0.28
64. 0.4
65. $0.75 \times 200 = 150$ (from students)
 $250 - 150 = 100$ (from adults)
 $100 \div 1.25 = 80$ (adult tickets) were sold.
66. $4 \times 10 \times 10 \times 5 = 2000$
67. A
 $32 \times 16 = 512$
 $512 - \frac{1}{4}(256\pi)$
 $= 512 - 64\pi$
68. $\frac{1}{2} = 1/2$
69. C
70. 24 min = 0.4 hr
 $0.4 \times 5 = 2$
 $10 \times 5 = 50$ pages
71. $\frac{2}{8} = \frac{1}{4} = 1/4$
72. $300 + 15 \times 80 = 1500$
73. B
 $500 + 10 \times 90 = 1400$
Plan A: $1500 - 1300 = 200$
Plan B: $1400 - 1300 = 100$
74. 12 min 15 sec = $12\frac{1}{4}$ min
 $8 \times 12\frac{1}{4} = 98$ min = 1 hr & 38 min
75. The total cost of the car:
 $9600 + 6900 = 16500$
 $16500 - 7500 = 9000$
 $9000 \div 3000 = \$3.00$
76. $15 + 20 = 35$
77. $80 \div 4 = 20$
 $60 \div 4 = 15$
 $20^2 - 15^2 = 400 - 225 = 175$ sq. in
78. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4} = 1/4$
79. C
80. D

Answer Key

1. The probability of getting the first 'b' is $\frac{2}{11}$
The probability of getting the second 'b' is $\frac{1}{10}$
Thus, the probability of getting two 'bb' is $\frac{2}{11} \times \frac{1}{10} = \frac{1}{55}$
2. The chance of getting 'ab' = $\frac{2}{11} \times \frac{1}{10} = \frac{2}{110} = \frac{1}{55}$
The chance of getting 'ba' = $\frac{1}{10} \times \frac{2}{11} = \frac{2}{110} = \frac{1}{55}$
the chance of getting either one is $2 \times \frac{1}{55} = \frac{2}{55}$
3. $P(\text{red and blue}) = P(\text{red}) \cdot P(\text{blue}) = \frac{3}{9} \times \frac{6}{9} = \frac{2}{9}$
 $P(\text{blue and red}) = P(\text{blue}) \cdot P(\text{red}) = \frac{6}{9} \times \frac{3}{9} = \frac{2}{9}$
 $P(\text{blue and red in either order}) = \frac{2}{9} + \frac{2}{9} = \frac{4}{9}$
4. $60 \times \frac{7}{12} = 35$ reds
5. $6! = 720$
6. $2 \times 5! = 240$
7. $4! \times 2 \times 2 = 96$
8. $3! \times 2^3 = 48$
9. Two cases:
Case 1:
_ (AB) _ X (CD) _
 $3 \times 2 \times 2^2 = 24$
Case 2:
_ (CD) _ X (AB) _
 $3 \times 2 \times 2^2 = 24$
 $2 \times 24 = 48$
10. $720 - 240 = 480$
11. $3! \times 4! = 144$
12. $2 \times 4! = 48$
13. $\frac{2}{6} \times \frac{1}{5} = \frac{1}{15}$
 $\frac{48}{720} = \frac{1}{15}$
14. Method I)
 $\frac{2}{6} \times \frac{1}{5} = \frac{1}{15}$
Method II)
 $\frac{48}{720} = \frac{1}{15}$
Method III)
 ${}_6C_2 = 15$
The probability is $\frac{1}{15}$.
15. $\frac{3}{6} \times \frac{2}{5} = \frac{1}{5}$
16. Method I)
 $240/720 = \frac{1}{3}$
Method II)
 $\frac{1}{6} \times \frac{1}{5} (1 \times 1 + 1 \times 2 + 1 \times 2 + 1 \times 2 + 1 \times 2 + 1 \times 1) = \frac{1}{3}$
17. $144/720 = \frac{1}{5}$
18. _A_xB_yC_
 $3! \times 3! \times 4 = 144$
 $144/720 = \frac{1}{5}$
19. $5! = 120$
20. ${}_6C_3 = 20$
21. $12 \div 4 = 3$, $3 \times 3 \times 3 = 27 \text{ in}^2$
22. The length of the rectangle is $3 \times 3 = 9$, the perimeter is $2(3+9) = 24 \text{ in}$.
23. $31.4 = 10 \times 3.14$
(a) $10 \div 2 = 5$ (radius)
(b) $3.14 \times 5 \times 5 = 78.5 \text{ sq. in.}$
24. $72 \div 2 = 36$
(a) $36 \times \frac{1}{4} = 9 \text{ m (width)}$
(b) $36 \times \frac{3}{4} = 27 \text{ m (length)}$
25. Split the rectangle into two halves. Therefore, the sum of length and width of each half is 28. Since the width is 8, the length is 20. For short, we have $56 \div 2 - 8 = 20$



26. A
27. B
28. D
29. D
30. 60
31. D
 $36(16 - 10)$
32. C
 $4500 \div 750 = 450 \div 75 = 6$
33. B
34. C
 $3 \times 40^2 = 4800$
35. A
36. C
 $V = s^2h$
 $2s)^2(3h) = 12s^2h = 12V$
37. D

MAP 280 (T2) Issue 7

38. A
 $3 \times 4 = 12$
39. D
40. $\frac{1}{2} \times 6 \times h = 24$
 $h = 8$
41. 80
42. B
 There are $4 \times 0.2 = 0.8$ cup of vinegar among the 5 cups. Therefore, the percentage is $0.8 \div 5 = 0.16 = 16\%$
43. D
 $3 \times 12 = 36$
 $36^2 = 1296$
44. D
45. D
 $\frac{65-50}{50} = 30\%$
46. Change both sides to the same base: 2.
 $2^{2(x+1)} = 2^3$
 $2(x+1) = 3$
 $2x = 1$
 $x = \boxed{1/2}$
47. C
48. D
 $143 = 11 \times 13$
49. D
 $(x^2 + 4x + 1)(x - 3) = x^3 + x^2 - 11x - 3$
50. D
 Their combined speed is $45 + 53 = 98$ mph.
 $1029 \div 98 = 10.5$
 It takes them 10.5 hr to meet.
51. C
52. A
 $23,500 \times 54\% = 12,690$
53. C
54. C
 The total number of marbles is $5 + 8 + 6 + 5 = 24$
 $24 - 4 = 20$
 $\frac{4}{20} = \frac{1}{5}$
55. C
 $1345 \times 24\% = 322.80$
56. B
 $359,000 \times 1.5\% = 5,385$
57. C
 Let $x =$ the smaller; $x + 2 =$ the larger. Then, we have
 $x + 2(x + 2) = 7$
 $3x = 3$
 $x = 1$
 The larger $= x + 2 = 3$
58. D
59. B
 five less than the sum of 9 and $y = 9 + y - 5$
60. A
61. B
 $.018 \div 200$
 $= (18 \times 10^{-3}) \div (2 \times 10^2)$
 $= (18 \div 2)(10^{-3} \div 10^2)$
 $= 9 \times 10^{-5}$
 $= 0.00009$
62. B
 $(-x) - 10 = 5$
 $x = -15$
63. D
 $550 \times (1 - 10\% - 7\%) = 456.50$
64. D
65. C
66. 72
67. $250000 + 12000 + 144 = 262144$
68. $4\sqrt{xy} = 12$
69. $4^{x+2} + 4^{x+5} = 65(4^{x+2}) = 130$
 $4^{x+2} = 2$
 $x + 2 = 0.5$
 $x = -1.5$
70. 2