Answer Key

1. 7
2. 6
3. 8
4. 14
5. 16
6. 4
7. 24
8. 6
9. 10
10. 8
11. 10.85
12. 11
13. 12
14. 17.7
15. 11
16. 11.8
17. 5.5
18. 12.3
19. 11.86
20. 15.8
21. 5
22. 48
23. 8
24. 21
25. 25
26. 18
27. 6
28. 28
29. 21
30. 16
31. 20
32. 33
33. 38
34. 19
35. 17
36. 35
37. 26
38. 28
39. 16
40. 39
41. 8
42. 4.2
43. 2.8
44. 12
45. 1.2
46. +
47. +
48. 4.1
49. 5.4
50. 9.7
51. 5
52. 29
53. 7
54. 20
55. 5
56. 12
57. 32
58. 28
59. 18
60. 22
61. 29
62. 5
63. 5
64. 29
65. 26
66. 26
67. 10
68. 29
69. 34
70. 14
71. A=1, B=6, C=3
    Ans=1 (for A) & 6 (for B) & 3 (for C)
72. A=5, B=5, C=2
    Ans=5 (for A) & 5 (for B) & 2 (for C)
73. A=5, B=2, C=1
    Ans=5 (for A) & 2 (for B) & 1 (for C)
74. A=2, B=0, C=5
    Ans=2 (for A) & 0 (for B) & 5 (for C)
75. A=2, B=8, C=1
    Ans=2 (for A) & 8 (for B) & 1 (for C)
76. A=6, B=6, C=9
    Ans=6 (for A) & 6 (for B) & 9 (for C)
77. A=1, B=2, C=2
    Ans=1 (for A) & 2 (for B) & 2 (for C)
78. A=8, B=6, C=4
    Ans=8 (for A) & 6 (for B) & 4 (for C)

79. A=1, B=7, C=1
    Ans=1 (for A) & 7 (for B) & 1 (for C)
80. A=1, B=5, C=6
    Ans=1 (for A) & 5 (for B) & 6 (for C)
81. 7
82. 5
83. 3
84. 9
85. 2
86. 9
87. 8
88. 6
89. 16
90. 19
91. 133
92. 47
93. 78
94. 106
95. 58
96. 112
97. 30
98. 60
99. 27
100. 173
101. 11:55 am
102. 40
103. (a) 40 + 30 = 70¢
     (b) 20 - 30 = 10¢
104. (a) A
     (b) D
     (c) 20 inches
105. 17 – 8 = 9
106. 28÷6 = 4R4
     4 + 1 = 5 boxes
107. 81 – 17 = 64
108. 4 + 3 + 2 + 1 = 10 blocks
109. 1Q + 3 P
     Ans = 4 coins
110. 83
111. 6 min
112. 50
113. 12÷4 = $3.00
114. 36
115. 10 - 4 + 2 = 8
116. 9 + 4 - 2 = 11
117. 19
118. 19
119. 1 + 2 = 3
     3×12 = 36 eggs
120. 600 ÷ 30 = 20 (pt)

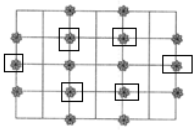
Answer Key

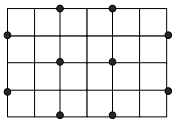
1. 9
2. 12
3. 9
4. 2
5. 6
6. 81
7. 7
8. 6
9. 8
10. 21
11. 18
12. 12
13. 24
14. 15
15. 72
16. 8
17. 15
18. 40
19. 45
20. 64
21. 4/5
    GCF = 2
22. 7/9
    GCF = 2
23. 4/9
    GCF = 6
24. 6/7
    GCF = 6
25. 9/8
    GCF = 9
26. 2/9
    GCF = 10
27. 5/9
    GCF = 10
28. 5/6
    GCF = 15
29. 2/3
    GCF = 16
30. 3/5
    GCF = 20
31. 10.5
32. 7.5
33. 5.5
34. 6.5
35. 3.5
36. 1.75
37. 1.5
38. 6.75
39. 6.75
40. 4.125
41. $10\frac{1}{8}$
42. $8\frac{1}{8}$
43. $8\frac{7}{8}$
44. $8\frac{1}{10}$
45. $5\frac{7}{10}$
46. $2\frac{1}{4}$
47. $2\frac{3}{8}$
48. $1\frac{1}{10}$
49. $7\frac{2}{5}$
50. $4\frac{3}{20}$
51.
52. 4 (GCF) & 144 (LCM)
53. 13 (GCF) & 26 (LCM)
54. 7 (GCF) & 14 (LCM)
55. 7 (GCF) & 84 (LCM)
56. 6 (GCF) & 168 (LCM)
57. 9 (GCF) & 135 (LCM)
58. 9 (GCF) & 108 (LCM)
59. 5 (GCF) & 195 (LCM)
60. 8 (GCF) & 96 (LCM)
61. ¾ – ¼ = 1/2
62. 32
63. ⅝ ⇒ 9/12 = ¾ = 6/8
    6/8 - ⅝ = ⅛
    Original = 5/8
64. $4
65. (⅓)×(⅝)×24 = 5 ounces
66. 14÷1¾ = <u>8 hrs</u>
67. $180\times\frac{4}{5} = 144$
68. 50÷⅕×5 = 1250 mi
69. $\frac{3}{6}=\frac{1}{2} = 1/2$

MAP 235 (T3) Issue 7

70. 1 + 2 = 3
    60÷3 = 20 (colored)
    2×20 = <u>40 (black-and-white)</u>

71. Remove the squared ones:





    Ans = 10

72. 10×2 = 20 (if 10 wins)
    20 - 11 = 9 (the deficiency)
    2 + 1 = 3 (the loss occurs from winning to losing)
    9÷3 = 3 (losses)
    10 - 3 = 7 wins

73. 100 ÷2 = 50
    50 - 3 = 47
    47×2 = 94
    94 - 3 = <u>91</u>

74. A
    100÷20 = 5
    Thursday + 4 = <u>Monday</u>

75. 100÷40 = 2.5
    100 – 90 = 10
    10÷2.5 = 4
    40 – 4 = <u>36</u>

76. 1000÷200 = 5

77. 1000÷25 = 40
    40×0.1 = 4
    25×4 = <u>$100</u>

78. 11 – 8 = 3
    13 + 3 = 16

79. 12×3 = 36
    36÷4 = 9
    9×9 = 81 cm^2

80. 1357531

Answer Key

1. 10
2. 8
3. 0.6
4. 18
5. 0.9
6. 0.6
7. 14
8. 1.2
9. 40
10. 16
11. 5
12. 0.0035
13. 0.4
14. 0.003
15. 9
16. 0.028
17. 8
18. 0.001
19. 6
20. 0.0015
21. 2
22. 5
23. 300
24. 50
25. 5
26. 800
27. 70
28. 0.9
29. 30
30. 500
31. 2
32. 6
33. 0.4
34. 0.8
35. 9
36. 3
37. 0.2
38. 5
39. 0.3
40. 7
41. 0.008
42. 0.0002
43. 0.007
44. 0.0003
45. 0.05
46. 0.00002
47. 0.0009
48. 0.00003
49. 0.0006
50. 0.004
51. $2^2 \times 3^1 \times 5^0 \times 7^1$
52. $2^1 \times 3^2 \times 5^1 \times 7^0$
53. $2^5 \times 3^1 \times 5^0 \times 7^0$
54. $2^2 \times 3^0 \times 5^2 \times 7^0$
55. $2^0 \times 3^1 \times 5^1 \times 7^1$
56. $2^2 \times 3^3 \times 5^0 \times 7^0$
57. $2^4 \times 3^0 \times 5^0 \times 7^1$
58. $2^3 \times 3^1 \times 5^1 \times 7^0$
59. $2^1 \times 3^2 \times 5^0 \times 7^1$
60. $2^7 \times 3^0 \times 5^0 \times 7^0$
61. 1287
62. 1360
63. 1435
64. 1512
65. 1369
66. 1444
67. 1521
68. 1600
69. 1681
70. 1764
71. $\frac{9}{56}$
GCF = 4, LCM = 56
72. $\frac{48}{175}$
GCF = 5, LCM = 175
73. $\frac{4}{75}$
GCF = 10, LCM = 150
74. $\frac{22}{63}$
GCF = 2, LCM = 126
75. $\frac{65}{84}$
GCF = 3, LCM = 84
76. $\frac{29}{126}$
GCF = 3, LCM = 126

77. $\frac{19}{350}$
GCF = 5, LCM = 350

78. $\frac{33}{40}$
GCF = 4, LCM = 40

79. $\frac{1}{450}$
GCF = 5, LCM = 450

80. $\frac{1}{20}$
GCF = 3, LCM = 60

81. 3

82. 729

83. 64

84. 64

85. 36

86. 6

87. 100

88. 10

89. 1000

90. 32

91. $\frac{175}{\frac{25}{60}} = \frac{175 \cdot 60}{25} = 7 \times 60 = 420$

92. E
40 - 12 = 28
18 + 15 - 28 = 5

93. $\frac{1212}{4848} = \frac{1}{4} = 25\%$

94. 2.13 + 3.12 = \$5.25

95. 5.25×2 = \$10.50

96. D

97. $\mathbf{72} \times (1 + \frac{1}{6}) = 84$
or
$84 \div \frac{7}{6} = 72$

98. $84 \times (1 + \frac{1}{6}) = 98$

99. $\frac{24{,}000}{30{,}000} = \frac{24}{30} = \$0.80$

100. $1\frac{1}{2} \times 10 = 15$ miles

Answer Key

1. 100, 10
2. 200, 20
3. 300, 30
4. 400, 40
5. 500, 50
6. 600, 60
7. 700, 70
8. 800, 80
9. 900, 90
10. 1000, 100
11. 560
12. 490
13. 240
14. 14
15. 350
16. 63
17. 42
18. 1.6
19. 280
20. 21
21. 3
22. 1200
23. 0.4
24. 100000
25. 0.02
26. 1600
27. 7
28. 1800
29. 3
30. 4000
31. 0.08
32. 27000
33. 0.02
34. 160000
35. 7
36. 2000
37. 3
38. 15000
39. 6
40. 120000
41. 0.5
42. 1.5
43. 2
44. 2.5
45. 3
46. 3.5
47. 4
48. 4.5
49. 9.5
50. 14.5
51. $-35x + 35$
52. $-15 - 6x$
53. $65x - 30$
54. $12x - 16$
55. $9 + 12x$
56. $24x + 9$
57. $-24x - 12$
58. $24 - 8x$
59. $-16x + 4$
60. $4x - 2$
61. $4x - 2$
62. $-4x + 20$
63. $13x + 4$
64. $-8x + 4$
65. $8x - 6$
66. $-5x - 4$
67. $7x - 7$
68. $-5x - 3$
69. $2x - 8$
70. $-x - 2$
71. -3
72. 4
73. 9
74. 3
75. 5
76. 4
77. 7
78. 8
79. -4
80. 4
81. $x = -5$
82. 23/9
83. $x = 8$

84. $x = 4$
85. $x = -2$
86. $x = 2$
87. $x = 1$
88. $-6\frac{1}{2} = -6.5$
89. $8/5$
90. $x = 2$
91. $x = 2$
92. 5
93. $x = -4$
94. $x = -1$
95. -5
96. 0.2
97. $y = -9$
98. $x = 2$
99. -3
100. $x = -4$
101. 3
102. 8
103. 9
104. 2
105. 9
106. 1
107. 3
108. 9
109. $4/3$
110. -5
111. $3x^2 + 15x - 6$
112. $4x^2 - 16x - 2$
113. $-9x^2 + 11x + 4$
114. $-2x^2 - 2x + 6$
115. $4 - 16x$
116. $4 + 4x$
117. $2 + 3x$
118. $2x - 1$
119. $6x^2 + 6x + 12$
120. $-4x^2 - 7x - 3$

Answer Key

1. 729
2. 1024
3. 1024
4. 1024
5. 2048
6. 2048
7. 2048
8. 4096
9. 4
10. 4
11. 8
12. 64
13. 9
14. 81
15. 4
16. 8
17. 16
18. 64
19. 64
20. 64
21. $\frac{3}{4}$
22. $\frac{3}{2}$
23. $\frac{2}{3}$
24. $\frac{4}{3}$
25. $\frac{2}{5}$
26. $\frac{3}{5}$
27. $\frac{4}{5}$
28. $\frac{6}{5}$
29. $\frac{1}{3}$
30. $\frac{1}{2}$
31. 4
32. 8
33. 16
34. 64
35. 4
36. 8
37. 16
38. 32
39. 9
40. 27
41. $\frac{1}{81}$
42. $\frac{1}{4}$
43. $\frac{1}{8}$
44. $\frac{1}{16}$
45. $\frac{1}{32}$
46. $\frac{1}{4}$
47. $\frac{1}{8}$
48. $\frac{1}{16}$
49. $\frac{1}{32}$
50. $\frac{1}{9}$
51. $\frac{7}{2}+\frac{2}{4} = 4$
52. $\frac{4}{1}+\frac{1}{2} = 4\frac{1}{2}$
53. $\frac{6}{5}+\frac{1}{2} = 1\frac{7}{10}$
54. $\frac{3}{5}+\frac{5}{4}+\frac{3}{2} = 3\frac{7}{20}$
55. $\frac{5}{4}+\frac{1}{2}+\frac{3}{1} = 4\frac{3}{4}$
56. $\frac{8}{3}+\frac{2}{4} = 3\frac{1}{6}$
57. $\frac{7}{8}+\frac{2}{3} = 1\frac{13}{24}$
58. $\frac{1}{7}+\frac{3}{2} = 1\frac{9}{14}$
59. $\frac{8}{5}+\frac{4}{5}+\frac{1}{2} = 2\frac{9}{10}$
60. $\frac{7}{4}+\frac{5}{1}+\frac{3}{1} = 9\frac{3}{4}$
61. $(x - 5)(x + 8)$
62. $(x - 4)(x - 1)$
63. $(x - 7)(x + 2)$
64. $(x - 4)(x + 7)$
65. $(x - 7)(x + 5)$
66. $6(2x + 3)(5x - 4) = 0$
    $x = -3/2$ or $4/5$
67. $(2x - 7)(5x + 8) = 0$
    $x = 7/2$ or $-8/5$
68. $2(6x + 1)(2x + 5) = 0$
    $x = -1/6$ or $-5/2$

69. $(x + 6)(12x – 1) = 0$
$x = -6$ or $1/12$

70. $8(3x – 2)(4x + 3) = 0$
$x = 2/3$ or $-3/4$

71. $x = 2$

72. $x = 2$

73. $2x = 1$
$x = 0.5$

74. No solution

75. $x = 3$

76. $\frac{4x}{5} = \frac{1}{3}$
$x = \frac{5}{12}$

77. $2\sqrt{x+1} = 3x-2$
$4(x+1) = 9x^2-12x+4$
$9x^2 – 16x = 0$
$x = \frac{16}{9}$ (0 is invalid)

78. $3^{2x+1} = \frac{6^x}{2^x}$
$3^{2x+1} = 3^x$
$2x + 1 = x$
$x = -1$

79. $2 – 3x = -2x$
$x = 2$

80. Let $y = 2^x$, so $y^2 = 4^x$
$4^x - 12 \cdot 2^x + 32 = 0$
$y^2 – 12y + 32 = 0$
$(y – 4)(y – 8) = 0$
$y = 4$ or 8
$x = 2$ or 3

81. Let: $y = \log x$
$(y – 10)(y – 1) = 0$
$x = 10$ or 10^{10}

82. $x = 0.001$ or 10

83. $(2\log x – 1)(\log x + 3) = 0$
$x = \sqrt{10}$ or 0.001

84. $3x – 2 = 100$
$x = 34$

85. $x = ½(5x – 6)$
$2x = 5x – 6$
$x = 2$

86. $x = x^2 – 2$
$x^2 – x – 2 = 0$
$(x – 2)(x + 1) = 0$
$x = 2$ (-1 invalid, why?)

87. $x(x – 9) = 10$
$x = 10$ (1 invalid)

88. $\frac{\log_2 x}{2} = \frac{\log_2 2x}{3}$
$3\log_2 x = 2\log_2 2x$
$3\log_2 x = 2(1+\log_2 x)$
$\log_2 x = 2$
$x = 4$

89. $(3 – x)(3 + x) = 1$
$9 – x^2 = 1$
$x = \pm\sqrt{8}$

90. $x = 9$

91. 0.1

92. $\sqrt{10}$

93. 10

94. $10^{\sqrt{2}}$

95. $6^8 – 1$

96. 40

97. $2\times½\log_2 x = 3$
$x = 8$

98. $x = 5$

99. $\log_5(x+1) = \pm 2$
$x + 1 = 5^{\pm 2}$
$x = 24$ or $\frac{-24}{25}$

100. $14 – 5x = x^2$
$x^2 + 5x – 14 = 0$
$(x + 7)(x – 2) = 0$
$x = 2$ (-7 invalid)