

Answer Key

- | | |
|-------------------|---------------------------------------|
| 1. N/A | 43. 0.1 |
| 2. N/A | 44. - |
| 3. N/A | 45. 3 |
| 4. N/A | 46. 9.2 |
| 5. N/A | 47. 4.1 |
| 6. N/A | 48. 5.8 |
| 7. N/A | 49. 2.4 |
| 8. N/A | 50. 6.6 |
| 9. N/A | 51. 27 |
| 10. N/A | 52. 20 |
| 11. $\frac{3}{8}$ | 53. 27 |
| 12. $\frac{1}{2}$ | 54. 28 |
| 13. $\frac{1}{2}$ | 55. 21 |
| 14. $\frac{1}{8}$ | 56. 25 |
| 15. $\frac{1}{2}$ | 57. 2 |
| 16. $\frac{2}{3}$ | 58. 24 |
| 17. 1 | 59. 32 |
| 18. 1 | 60. 17 |
| 19. $\frac{2}{3}$ | 61. 26 |
| 20. $\frac{1}{2}$ | 62. 27 |
| 21. $\frac{4}{7}$ | 63. 10 |
| 22. $\frac{5}{8}$ | 64. 13 |
| 23. $\frac{4}{7}$ | 65. 28 |
| 24. $\frac{3}{6}$ | 66. 28 |
| 25. $\frac{3}{5}$ | 67. 4 |
| 26. $\frac{4}{6}$ | 68. 28 |
| 27. $\frac{2}{4}$ | 69. 32 |
| 28. $\frac{2}{4}$ | 70. 22 |
| 29. $\frac{4}{6}$ | 71. A=5, B=7, C=2 |
| 30. $\frac{5}{7}$ | Ans=5 (for A) & 7 (for B) & 2 (for C) |
| 31. 12 | 72. A=3, B=4, C=6 |
| 32. 32 | Ans=3 (for A) & 4 (for B) & 6 (for C) |
| 33. 17 | 73. A=4, B=7, C=8 |
| 34. 35 | Ans=4 (for A) & 7 (for B) & 8 (for C) |
| 35. 36 | 74. A=1, B=0, C=3 |
| 36. 18 | Ans=1 (for A) & 0 (for B) & 3 (for C) |
| 37. 17 | 75. A=3, B=2, C=7 |
| 38. 28 | Ans=3 (for A) & 2 (for B) & 7 (for C) |
| 39. 30 | 76. A=3, B=1, C=1 |
| 40. 26 | Ans=3 (for A) & 1 (for B) & 1 (for C) |
| 41. 1.4 | 77. A=6, B=7, C=5 |
| 42. 0.8 | Ans=6 (for A) & 7 (for B) & 5 (for C) |
| | 78. A=8, B=4, C=6 |
| | Ans=8 (for A) & 4 (for B) & 6 (for C) |

MAP 225 (T3) Issue 3 (Including Bonus Packet)

79. $A=9, B=3, C=7$

Ans=9 (for A) & 3 (for B) & 7 (for C)

80. $A=7, B=3, C=1$

Ans=7 (for A) & 3 (for B) & 1 (for C)

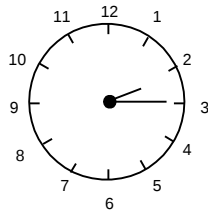
81. $30 \times 8 = 240$

82. $125 - 64 = 61$

83. $130 \div 10 = 13$ dimes

84. $28 - 9 = 19$

85. $2:40 - 0:25 = 2:15$



86. $45 + 15 = 60$

87. $2 \times 13 = 26$

88. $40 \times 7 = 280$

89. $24 \times 60 = 1440$

90. $243 - 219 = 24$

91. $45 - 38 = 7$

92. $42 - 5 = 37$

93. $5 \times 2 = 10$

94. $2900 + 1700 + 2700 = 7300$

95. $4 \times 12 = 48$

96. $4 \times 2 + 3 \times 3 = 17$

97. $3 \times 2 = 6$

$6 \div 3 = 2$

98. $350 \div 5 = 70$

99. $5 \times 8 = 40$

100. D

MAP 225 (T3) Spring Bonus Packet

Answer Key

- | | |
|----------|---|
| 1. N/A | 47. 9.02 |
| 2. N/A | 48. - |
| 3. N/A | 49. 2.96 |
| 4. N/A | 50. - |
| 5. N/A | 51. 11 |
| 6. N/A | 52. 30 |
| 7. N/A | 53. 11 |
| 8. N/A | 54. 30 |
| 9. N/A | 55. 4 |
| 10. N/A | 56. 30 |
| 11. N/A | 57. 16 |
| 12. N/A | 58. 26 |
| 13. N/A | 59. 22 |
| 14. N/A | 60. 34 |
| 15. N/A | 61. 17 |
| 16. N/A | 62. 26 |
| 17. N/A | 63. 17 |
| 18. N/A | 64. 12 |
| 19. N/A | 65. 23 |
| 20. N/A | 66. 32 |
| 21. 4 | 67. 27 |
| 22. 3 | 68. 7 |
| 23. 6 | 69. 9 |
| 24. 12 | 70. 30 |
| 25. 9 | 71. $16 \div 2 = 8$ |
| 26. 10 | 72. $24 + 61 = 85$ |
| 27. 5 | 73. \$2.40 |
| 28. 8 | 74. $5 \times 24 = 120$ |
| 29. 9 | $2 \times 30 = 60$ |
| 30. 5 | $120 + 60 = \boxed{180}$ |
| 31. 9 | 75. $3 \times 20 = 60$ |
| 32. 23 | 76. $8 + 5 + 2 = 15$ |
| 33. 24 | 77. $4 \times 80 = 320$ |
| 34. 29 | 78. $50 \times 5 = 250$ |
| 35. 7 | 79. $2 + 3 = 5$ o'clock |
| 36. 18 | 80. $2 \times 3 = 6$ inches |
| 37. 13 | 81. $120 \div 4 = 30$ |
| 38. 8 | 82. $82 - 18 = 64$ |
| 39. 16 | 83. $4 \times 100 = 400$ |
| 40. 26 | 84. $8 \times 40 = 320$ |
| 41. 7.1 | 85. 5 dimes = 2 quarters, 20 dimes = 8 quarters |
| 42. 7.98 | |
| 43. 2.58 | |
| 44. 1.9 | |
| 45. - | |
| 46. 6.32 | |

MAP 225 (T3) Spring Bonus Packet

86. $2 \times 5 = 10$

$3 \times 2 = 6$

$25 - 16 = \boxed{9}$

87. $3 \times 17 = 51$

$100 - 51 = \boxed{49}$

88. $18 - 9 = 9$

89. $16 \div 2 = 8$

90. $12 + 18 = 30$

Answer Key

- | | |
|--------------------------------|--|
| 1. 56 | 35. 0.125 |
| 2. 32 | 36. 0.25 |
| 3. 63 | 37. 0.375 |
| 4. 6 | 38. 0.5 |
| 5. 2 | 39. 0.625 |
| 6. 63 | 40. 0.75 |
| 7. 12 | 41. $\frac{7}{8}$ |
| 8. 12 | 42. $\frac{1}{10}$ |
| 9. 10 | 43. $\frac{1}{5}$ |
| 10. 28 | 44. $\frac{1}{4}$ |
| 11. 36 | 45. $\frac{1}{2}$ |
| 12. 36 | 46. $\frac{3}{4}$ |
| 13. 35 | 47. $\frac{1}{8}$ |
| 14. 54 | 48. $\frac{1}{4}$ |
| 15. 21 | 49. $\frac{3}{8}$ |
| 16. 49 | 50. $\frac{1}{2}$ |
| 17. 40 | 51. |
| 18. 16 | 52. 2 (GCF) & 30 (LCM) |
| 19. 14 | 53. 6 (GCF) & 18 (LCM) |
| 20. 54 | 54. 2 (GCF) & 70 (LCM) |
| 21. $\frac{5}{8}$
GCF = 2 | 55. 6 (GCF) & 90 (LCM) |
| 22. $\frac{3}{5}$
GCF = 4 | 56. 8 (GCF) & 120 (LCM) |
| 23. $\frac{2}{7}$
GCF = 6 | 57. 13 (GCF) & 130 (LCM) |
| 24. $\frac{3}{8}$
GCF = 6 | 58. 8 (GCF) & 80 (LCM) |
| 25. $\frac{8}{9}$
GCF = 7 | 59. 2 (GCF) & 90 (LCM) |
| 26. $\frac{6}{7}$
GCF = 9 | 60. 5 (GCF) & 140 (LCM) |
| 27. $\frac{7}{8}$
GCF = 9 | 61. $\frac{1}{3}$ |
| 28. $\frac{5}{4}$
GCF = 14 | 62. $1 - \frac{2}{9} = \frac{7}{9}$
$81 \times \frac{7}{9} = 63$ |
| 29. $\frac{4}{7}$
GCF = 16 | 63. $\frac{1}{4} + \frac{1}{8} + \frac{1}{2} = (2 + 1 + 4)/8 = 7/8$ |
| 30. $\frac{10}{9}$
GCF = 20 | 64. $\frac{7}{8}$ |
| 31. 0.5 | 65. $24 - 12\frac{5}{8} = 11\frac{3}{8} = 11 \frac{3}{8}$ |
| 32. 0.25 | 66. $\frac{1}{2}$ |
| 33. 0.5 | 67. $\frac{3}{8} + \frac{1}{4} + \frac{1}{8} = \frac{1}{2} + \frac{1}{4} = \frac{3}{4}$
$1 - \frac{3}{4} = \frac{1}{4} = \frac{1}{4}$ |
| 34. 0.75 | 68. $7.5 \div 2.5 = 3$ |
| | 69. $3.5 \div 1\frac{3}{4} = 3.5 \times \frac{4}{7} = 2 \text{ hrs}$ |

MAP 235 (T3) Issue 3 (Including Bonus Packet)

70. (a) $\text{GCF}(20, 15) = 5$

(b) $(25+15) \div 5 = 7$

71. $1\frac{2}{3} + \frac{3}{4} + \frac{5}{6} = 2\frac{5}{12} + \frac{5}{6} = 3\frac{1}{4}$

72. $60 \times \frac{1}{4} = 15 \text{ sec}$

73. $1 - \frac{3}{4} = \frac{1}{4}$

$12 \times 3 = 36$

74. $3\frac{1}{4}$

75. 36

76. 10

77. $35\frac{1}{2} + 20 + 15\frac{1}{2} = 71 \text{ lbs}$

78. $32\frac{1}{8} - 27\frac{3}{4} = 5\frac{1}{8} - \frac{3}{4} = 4\frac{3}{8} = 4\frac{3}{8} \text{ pounds of sausage left}$

79. $140 \div 7 = 20 \text{ pounds}$

80. Method I)

$\frac{22\frac{1}{2} \div 3\frac{3}{4} = \frac{45}{2} \div \frac{15}{4} = \frac{45^3}{2} \times \frac{4^2}{15} = 6 \text{ ribbons}$

Method II)

$22.5 \div 3.75 = \frac{2250}{375} = \frac{90}{15} = 6 \text{ ribbons}$

81. $8 - 5 = 3$

$3 \times 30 = 90$

82. 30303

83. $5 + 1 = 6$

$6 \times 1.5 = 9 \text{ apples}$

84. $114 \div 3 = 38^{\text{th}} \text{ number}$

$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36$

108 will be the last entry in row 8.

111 will be the first entry in row 9.

So, $114 = 9 \text{ row \& 2 column (location)}$

85. $20000 - 10001 = 9999$

$9+9+9+9 = 36$

86. $18 \times \frac{1}{3} = 6$

$18 - 6 = 12$

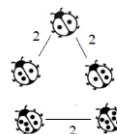
$12 \times \frac{1}{6} = 2$

$12 - 2 = 10$

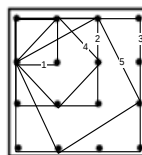
$10 \times \frac{2}{5} = 4$

$10 - 4 = 6$

87. $2 + 2 + 2 = 6$



88. $\frac{1}{4} \times 20 \times 6 \times 5 = 150$



89.

Ans = 5

90. $201 - 102 = 99$

$1000 - 99 = 901$

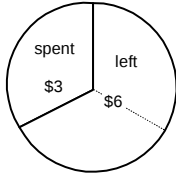
MAP 235 (T3) (Spring Bonus)

Answer Key

- | | |
|--------------------|--|
| 1. 12 | 35. 1.75 |
| 2. 5 | 36. 7.25 |
| 3. 16 | 37. 9.75 |
| 4. 63 | 38. 5.75 |
| 5. 21 | 39. 8.25 |
| 6. 21 | 40. 9.875 |
| 7. 28 | 41. $7\frac{5}{8}$ |
| 8. 48 | 42. $4\frac{1}{4}$ |
| 9. 42 | 43. $7\frac{3}{8}$ |
| 10. 12 | 44. $7\frac{3}{8}$ |
| 11. 72 | 45. $5\frac{1}{2}$ |
| 12. 24 | 46. $6\frac{1}{2}$ |
| 13. 36 | 47. $5\frac{1}{2}$ |
| 14. 36 | 48. $1\frac{1}{4}$ |
| 15. 14 | 49. $5\frac{3}{10}$ |
| 16. 20 | 50. $4\frac{3}{5}$ |
| 17. 36 | 51. |
| 18. 64 | 52. 19 (GCF) & 114 (LCM) |
| 19. 32 | 53. 11 (GCF) & 165 (LCM) |
| 20. 80 | 54. 18 (GCF) & 180 (LCM) |
| 21. $\frac{3}{4}$ | 55. 14 (GCF) & 168 (LCM) |
| GCF = 2 | 56. 19 (GCF) & 38 (LCM) |
| 22. $\frac{5}{7}$ | 57. 8 (GCF) & 288 (LCM) |
| GCF = 2 | 58. 16 (GCF) & 320 (LCM) |
| 23. $\frac{10}{9}$ | 59. 18 (GCF) & 216 (LCM) |
| GCF = 4 | 60. 14 (GCF) & 210 (LCM) |
| 24. $\frac{2}{5}$ | 61. $4 \times 3\frac{3}{4} = 4 \times 3 + 4 \times \frac{3}{4} = 12 + 3$ |
| GCF = 6 | = \$15 |
| 25. $\frac{4}{7}$ | 62. $4 \times 5 \times 8 \times 6\frac{3}{8} = 20 \times (48 + 3) = 960 + 60$ |
| GCF = 6 | = \$1020 |
| 26. $\frac{7}{6}$ | 63. $24 \times 15\frac{3}{4} = 24 \times 15 + 24 \times \frac{3}{4} = 12 \times 30 + 6 \times 3 = 360 +$ |
| GCF = 6 | 18 |
| 27. $\frac{6}{5}$ | = \$378 |
| GCF = 8 | |
| 28. $\frac{8}{7}$ | |
| GCF = 8 | |
| 29. $\frac{3}{7}$ | |
| GCF = 14 | |
| 30. $\frac{5}{4}$ | |
| GCF = 18 | |
| 31. 6.5 | |
| 32. 2.5 | |
| 33. 2.5 | |
| 34. 10.25 | |

MAP 235 (T3) (Spring Bonus)

64. $6 \div 2 = \$3$



65. $(1 - \frac{1}{3}) \times 30 = \frac{2}{3} \times 30 = \20

66. $65 \times \frac{3}{5} = \39

67. $60 \times 2 \times \frac{1}{3} = \40

68. $24 \div \frac{15}{3} = 24 \div 5 = 4.8$ minutes

69. $48 \times 6 = 288$ oz

70. $288 \div 32 = 9$ qt

71. $1.18 \times 5 = \$5.90$

72. $\frac{1.6}{12} \times 420 = \frac{0.4}{3} \times 420 = 0.4 \times 140 = 4 \times 14 = \56

73. $\frac{4}{5} = \frac{1}{10} + \frac{1}{2} + \frac{1}{5}$
 $1 - \frac{4}{5} = \frac{1}{5} = 1/5$

74. $42000 \times \frac{1}{3} = 14000$

$42000 + 14000 = 56000$

$56600 - 56000 = 600$

75. $2,400 \div 3,000 = 2.4 \div 3 = \0.8

76. $12\frac{1}{2} \times 8 = 100$ sq. inches

$100 \times 2 = 200$ sq. inches (front and back)

77. $120 \times (1 - \frac{1}{3}) = 90$ pounds

78. $9 - 2 = 7$ (out of 9, dressed up)

$81 \times \frac{7}{9} = 63$

79. B

$10/20 = \$0.50$ (unit price for 20-piece)

$12/40 = \$0.30$ (unit price for 40-piece)

So, the 40-piece pack is cheaper.

80. $45 \times \frac{1}{3} = 15$

$45 + 15 = 60$ lb

81. $30 + 3 \times 30 = 120$

$120 \div (1 + 2) = 40$ ¢

82. 311

83. $2 \times 2 \times 2 = 8$ (core center)

$6 \times 2 \times 2 = 24$ (side cave)

$8 + 24 = 32$

84. $32 \times 4 \times 8 = 1024$

85. $35 - 17 = 18$

$18 \div 2 = 9$

$17 - 9 = 8$

86. $35 - 20 + 1 = 16$

$16 + 1 = 17$

87. $35 \div 5 = 7$

$2 \times (5 + 7) = 24$

88. $36 = 2 \times 3 \times 6, 2 + 3 + 6 = 11$

$36 = 6 \times 6, 6 + 6 = 12$

$36 = 3 \times 12, 3 + 12 = 15$

$36 = 4 \times 9, 4 + 9 = 13$

Orange	Apricot	Peach	
	1	1	18
1	1		28
1		1	30
2	2	2	76
1	1	1	38

1: means whole

89. Ans = 38

90. $39 \div 2 = 19.5$

$19.5 - 1.5 = 18$

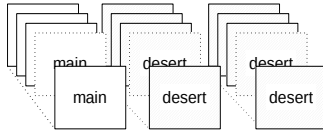
$1.5 \times 18 = 3 \times 9 = 27$ cm²

Answer Key

1. 42
2. 400
3. 24
4. 5.4
5. 40
6. 540
7. 48
8. 120
9. 1.8
10. 1.5
11. 0.02
12. 0.006
13. 0.004
14. 0.0025
15. 1000
16. 2000
17. 150
18. 400
19. 200
20. 40
21. 14
22. 22
23. 28
24. 32
25. 27
26. 33
27. 26
28. 34
29. 40
30. 44
31. 315
32. 352
33. 391
34. 432
35. 475
36. 520
37. 567
38. 616
39. 2450
40. 2574
41. 24 (A) & 4 (B) & 8 (C) & 6 (D)
42. 40 (A) & 5 (B) & 2 (C) & 4 (D)
43. 144 (A) & 6 (B) & 8 (C) & 8 (D)
44. 64 (A) & 8 (B) & 2 (C) & 2 (D)
45. 60 (A) & 5 (B) & 3 (C) & 3 (D)
46. $\frac{29}{160}$
GCF = 4, LCM = 160
47. $\frac{9}{28}$
GCF = 2, LCM = 28
48. $\frac{17}{54}$
GCF = 3, LCM = 54
49. $\frac{19}{270}$
GCF = 3, LCM = 270
50. $\frac{23}{150}$
GCF = 5, LCM = 150
51. $\frac{2}{105}$
GCF = 3, LCM = 105
52. $\frac{19}{36}$
GCF = 6, LCM = 36
53. $\frac{61}{360}$
GCF = 4, LCM = 360
54. $\frac{1}{45}$
GCF = 4, LCM = 180
55. $\frac{3}{350}$
GCF = 5, LCM = 350
56. 2
57. 20
58. 8000
59. 125
60. 4
61. 1000
62. 400
63. 4
64. 3
65. 100
66. 2 in (A) & 3 in (B) & 5 in (C) & 3 in (D)
67. 5 in (A) & 6 in (B) & 5 in (C) & 7 in (D)
68. 4 in (A) & 4 in (B) & 4 in (C) & 3 in (D)
69. 3 in (A) & 5 in (B) & 2 in (C) & 3 in (D)
70. 4 in (A) & 2 in (B) & 8 in (C) & 5 in (D)
71. $\frac{39-30}{30} = 0.3 = 30\%$
72. $\frac{3}{8} \times 6 = \frac{3}{4} \times 3 = 2\frac{1}{4} = 2\frac{1}{4}$

MAP 255 (T3) Issue 3 (Spring Packet Included)

73. 24 cards (main) & 48 cards (dessert)
In every 3 cards, there will be 1 card for main dish and 2 cards for dessert. Since there are 72 cards, there are 24 cards for main dish and 48 cards for dessert.



74. $1:30 + 4:00 + 3:00 = 8:30 \text{ P.M.}$
75. $9:00 - 4:00 + 3:00 = 8:00 \text{ P.M.}$
76. $1 + 1 + 2 = 4 \text{ (shares)}$
 $180^\circ \div 4 = 45^\circ$
 $\text{Ans} = 45^\circ \text{ \& } 45^\circ \text{ \& } 90^\circ$
77. C

78. E
 $23 - 3 = 20$
 $20 - 3 \times 4 = 8$
 $8 \div 4 = 2 \text{ (4-leg tables)}$
 $1 + 4 = 5 \text{ (3-leg tables)}$
79. $BC^2 = BD^2 + CD^2$
 $25^2 = 20^2 + 15^2$
 $BD = 20$
 $\frac{1}{2}(20)(30) = 300$
80. $3 + 6 = 9$
 $9 \div 24 = \frac{3}{8} = 37.5\%$
81. $24 - 6 = 18 \text{ hr}$
82. They are grandma, mom, and daughter.
83. $240 \div 40 = 6 \text{ hr}$
84. $1 - 20\% = 0.8$
 $90 \times 0.8 = 72 \text{ mph}$
85. $400 \times 75\% = 300$
or
 $300 \div 75\% = 300 \times \frac{4}{3} = 400$

MAP 255 (T3) Spring Bonus Packet

Answer Key

1. 2.5
2. 280
3. 300
4. 3.5
5. 35
6. 4.2
7. 210
8. 6.3
9. 300
10. 4.9
11. 0.1
12. 0.0125
13. 200
14. 6000
15. 1.5
16. 0.0015
17. 0.0375
18. 500
19. 0.0025
20. 0.025
21. 1422
22. 960
23. 1053
24. 1148
25. 1245
26. 1344
27. 1445
28. 1548
29. 4176
30. 4312
31. 39
32. 45
33. 38
34. 46
35. 52
36. 56
37. 51
38. 57
39. 50
40. 58
41. 10 (A) & 5 (B) & 8 (C) & 2 (D)
42. 45 (A) & 9 (B) & 4 (C) & 5 (D)
43. 168 (A) & 7 (B) & 3 (C) & 6 (D)
44. 100 (A) & 5 (B) & 6 (C) & 4 (D)
45. 120 (A) & 8 (B) & 7 (C) & 3 (D)
46. $\frac{9}{56}$
GCF = 4, LCM = 56
47. $\frac{48}{175}$
GCF = 5, LCM = 175
48. $\frac{4}{75}$
GCF = 10, LCM = 150
49. $\frac{22}{63}$
GCF = 2, LCM = 126
50. $\frac{65}{84}$
GCF = 3, LCM = 84
51. $\frac{29}{126}$
GCF = 3, LCM = 126
52. $\frac{19}{350}$
GCF = 5, LCM = 350
53. $\frac{33}{40}$
GCF = 4, LCM = 40
54. $\frac{1}{450}$
GCF = 5, LCM = 450
55. $\frac{1}{20}$
GCF = 3, LCM = 60
56. 2
57. 30
58. 1.69
59. 529
60. 15
61. 24
62. 2
63. 400
64. 2
65. 21
66. 6 in (A) & 15 in (B) & 7 in (C) & 4 in (D)
67. 4 in (A) & 8 in (B) & 3 in (C) & 5 in (D)
68. 4 in (A) & 12 in (B) & 5 in (C) & 6 in (D)
69. 6 in (A) & 7 in (B) & 4 in (C) & 3 in (D)
70. 8 in (A) & 10 in (B) & 7 in (C) & 5 in (D)

MAP 255 (T3) Spring Bonus Packet

71. Method I)
 $120 - 80 = 40$
 $160 \div 40 = 4$ (days)
 Method II)
 Listed below are the charges for the first 5 days:
 ❶ 240, 320, 400, **480**, 560
 ❷ 120, 240, 360, **480**, 600
 On the fourth day, both will have the same charge.
72. $15 \div 3 = 5$
 $5 \times 2 = 10$ tablespoons
73. $\frac{1}{2}(1 + 1.2) = 1.1$
 $880 \div 1.1 = 800$
 $800 \times 1.2 = 960$
74. D
75. $50 \times 3\frac{1}{2} = 150 + 25 = 175$ miles
76. $9.45 \times 2 = 18.90$
 $20 - 18.90 = \$1.10$
77. $2\frac{1}{2} = 2 \frac{1}{2}$ hr
78. $4 \div 0.01 = 400$ days
79. $(-120) \times -\frac{1}{3} \times -\frac{1}{4} \times -\frac{1}{5} = 2$
80. Square A has a side of 20- $20 \div 4 = 15$
 $20^2 - 15^2 = 400 - 225 = 175$ in²
81. $\frac{12}{6} = \frac{\Delta}{4}$
 $12 \times 4 = 48 = 6 \times \Delta$
 $\Delta = 8$
82. $1 + 20\% = 1.2$
 $6000 \div 1.2 = \$5000$
83. 6 possible ways
 Let F, A, and O stand for fiction, adventure, and other.
 FAO, FOA, OFA, OAF, AFO, and AOF.
84. distance = time $\times$ speed = $5.5 \times 50 = 275$ mi
85. $80\% : 20\% : 80\%$
 $= 4:1$
 $= \$100 : \25

Answer Key

1. -13
2. -5
3. -17
4. -16
5. -9
6. -9
7. 7
8. -4
9. -2
10. -1
11. 18
12. 3
13. 42
14. 7
15. 32
16. 12
17. 0
18. 96
19. 17
20. -3
21. $4x - 2$
22. $-4x + 20$
23. $13x + 4$
24. $-8x + 4$
25. $8x - 6$
26. $-5x - 4$
27. $7x - 7$
28. $-5x - 3$
29. $2x - 8$
30. $-x - 2$
31. $x = 5$
32. $11/2$
33. $x = -5$
34. $x = 4$
35. $x = -2$
36. $x = -1$
37. $x = 1$
38. -5
39. 14
40. $x = -4$
41. 1521
42. 1600
43. 1681
44. 1764
45. 1849
46. 1936
47. 2025
48. 2116
49. 2209
50. 2304
51. $\frac{10}{21} = 10/21$
52.
$$\begin{array}{r} 4\frac{1}{2} \\ + 5\frac{1}{6} \\ \hline \end{array} = 9\frac{2}{3} = 9\frac{2}{3}$$
53. $2\frac{7}{9} = 2\frac{7}{9}$
54. $6\frac{47}{60} = 6\frac{47}{60}$
55. $\frac{9}{14} = 9/14$
56. $\frac{11}{42} = 11/42$
57. 6
58. 1
59. $\frac{9}{25} = 9/25$
60. $\frac{9}{55} = 9/55$
61. $3 \times 65 = 195$ km
62. $264 \div 12 = 22$ (mi per gal)
 $22 \times 15 = 330$ mi
63. $16 \div 2 \times 23 = 184$
64. $\frac{10}{8} = \frac{5}{4} = 1\frac{1}{4}$ hr
 $\frac{10}{20} = \frac{1}{2}$ hr
 $1\frac{1}{4} + \frac{1}{2} = 1\frac{3}{4} = 1\frac{3}{4}$ hr
65. $35071 - 34746 = 325$ (distance)
 $325 \div 5 = 65$ mph
66. $290 \div 50 = 5.8$ hours = 5 hr & 48 min
67. 1 hour 20 min = $1\frac{1}{3}$ hr
 $30 \times 1\frac{1}{3} = 40$ miles
68. $\frac{2700}{4.5} = 600$ mph
69. 1 sec = $\frac{1}{3600}$ hr
 $45 \times \frac{1}{3600} = \frac{1}{80}$ mi = $\frac{1}{80} \times 5280$ ft = 66 ft
70. (a) $2 \times 55 = 110$ mi
(b) $\frac{\text{distance}}{\text{speed}} = \frac{330}{55} = \frac{30}{5} = 6$ hr

MAP 265 (T3) Issue 3 (Include Spring Bonus Packet)

71. $1 - 30\% = 1 - 0.3 = 0.7$

$30 \times 0.7 = \$21.00$

72. $\frac{31.2-24}{24} = 0.3 = 30\%$

73. $25 \times 3 = \$75$

74. $120 \times (1 + \frac{1}{3}) = \160

75. $90 \times (1 + 20\%) = 90 \times 1.2 = \108

76. $5 \times 1.7 = \$8.50$

77. $37.5 \div 50 = 0.375 = 75\%$

78. $120 \div 3 = 40$

$40 \times 1.06 = \$42.40$

79. (a) $\frac{1}{4}$ (b) $\frac{1}{2}$ (c) $\frac{3}{4}$

80. $450 \times 5\% = 4.5 \times 5 = \22.50

81. $150/200 = \frac{3}{4} = 0.75 = 75\%$

82. $\frac{1}{4} = 0.25 = 25\%$

83. $600 \times 5\% = 600 \times 0.05 = 6 \times 5 = \boxed{30}$

84. D

$\text{original} \times 0.8 = 260$

$\text{original} = 260 \div 0.8$

85. C

Key holes: A, B, C

Keys: K, L, M

	A	B	C
K	①	③	K
L	L	②	
M		M	

	A	B	C
K	①		③
L	L	②	
M		K	M

86. C

$10 \times 9 \times 8 = 720$

87. Let x be the number of dimes, then $17 - x$ would be the number of quarters. The value of dimes in

cents = $10x$. (Why?) The value of quarters in cents

= $25(17 - x)$

= $425 - 25x$

So, the total value of these coins

= $10x + 425 - 25x$

= 245

Solving this equation leads to

$425 - 15x = 245$

$15x = 180$

$x = 12$ (dimes), so $17 - x = 5$ (quarters)

88. F

$1000 \div 7 = 142R6$

It will appear 143rd row, F-column.

89. B

$81 \div 7 = 11 R4$

It will appear at l -row, d -column

90. $\begin{cases} M + D = 40 \\ M = D + 20 \end{cases}$

Solving the above system of linear equations will lead us to $M = 30$ (mother's age), and $D = 10$ (daughter's age).

Ans = 30 (Mom) and 10 (Daughter)

91. D

$11 \times 11 = 121$

$111 \times 111 = 12321$

$1111 \times 1111 = 1234321$

...

$11111111 \times 11111111 = 123456787654321$

92. All sums are listed in the following table. For example, two pennies have a sum of 2¢. Also, a quarter and a nickel have a sum of 30, and so on. There are 8 different sums: 2, 6, 10, 11, 15, 26, 30, and 35.

	P	N	D
P	2¢	6¢	11¢
N	6¢	10¢	15¢
Q	26¢	30¢	35¢

Ans = 8 different sums

93. C

Alice: $\frac{1}{8}$ lap 1 min

Cindy: $\frac{1}{5}$ lap 1 min

Cindy is ahead of Alice by $\frac{1}{5} - \frac{1}{8} = \frac{3}{40}$ lap each min.

It takes Cindy $\frac{40}{3}$ min to be ahead of Alice by a lap.

94. A

$792 = 1 \times 2^3 \times 3^2 \times 11$

MAP 265 (T3) Spring Bonus Packet

Answer Key

- | | |
|----------------|--|
| 1. -11 | 42. 8100 |
| 2. -10 | 43. 8281 |
| 3. -9 | 44. 8464 |
| 4. -6 | 45. 8649 |
| 5. -5 | 46. 8836 |
| 6. -8 | 47. 9025 |
| 7. -6 | 48. 9216 |
| 8. 2 | 49. 9409 |
| 9. 2 | 50. 9604 |
| 10. 5 | 51. 48 |
| 11. -1 | 52. 105 |
| 12. -4 | 53. 56 |
| 13. 4 | 54. 95 |
| 14. -51 | 55. 20 |
| 15. 15 | 56. 7 |
| 16. 60 | 57. 21 |
| 17. 99 | 58. 28 |
| 18. 41 | 59. 65 |
| 19. 8 | 60. 20 |
| 20. 15 | 61. (a) $72 \times \frac{1}{4} = 18$ |
| 21. $-5x - 9$ | (b) $72 \times 60 = 4320$ |
| 22. $4x + 2$ | 62. A |
| 23. $8x + 5$ | A) $3.60 \div 12 = \$0.30$ per can |
| 24. $4x + 17$ | B) $2.40 \div 6 = \$0.40$ per can |
| 25. $-10x$ | 63. $0.2 \times 3 = 0.6$ |
| 26. $-9x - 18$ | $0.2 \times 8 = 1.6$ kg (two bags) |
| 27. $-8x + 3$ | $1.6 \div 2 = 0.8$ kg (each bag) |
| 28. $6x - 8$ | 64. 15 cups of flour, 60 biscuits |
| 29. $3x - 9$ | milk: flour: biscuit |
| 30. $-4x + 8$ | = 1: 5: 20 |
| 31. $x = -3$ | = 3: 15: 60 |
| 32. $1/3$ | 65. $\frac{6}{15} = \frac{2}{5}$ |
| 33. $x = -5$ | $15,000 \times \frac{2}{5} = 6,000$ |
| 34. $x = -3$ | 66. cement: 2 trucks, gravel: 6 trucks |
| 35. $x = -2$ | cement: sand: gravel |
| 36. $x = -1$ | = 1: 2: 3 |
| 37. $x = 1$ | = c: 4: g |
| 38. 2 | c = 2 and g = 6 |
| 39. $x = 3$ | Ans = 2 (for cement) & 6 (for gravel) |
| 40. $x = 2$ | 67. $70\% \Rightarrow \$14$ |
| 41. 7921 | $70 \div 5 = 14$ |
| | $95 \div 5 = \underline{\$19}$ |
| | 68. $\frac{4.5}{2.88} \times 16 = 25$ (oz) |
| | $\frac{25}{3}$ min = $8\frac{1}{3}$ min = 8 min & 20 sec |

MAP 265 (T3) Spring Bonus Packet

69. Note that there are only 6 business days in a week for the store. The sales ratio for Sat: Thu: 4 others is 4: 2: 1: 1: 1: 1, thus, Thursday has a part of $2/(4+2+1+1+1+1)=2/10 = 1/5$

70. $(12000 - 6000) \div 3 = \$2,000$

71. $3 \times (100 \div 40) = \7.50

72. B

$42.00 \div 600 = \$0.07$ per kilowatt

$48.00 \div 800 = \$0.06$ per kilowatt (Hill community)

73. $\frac{5500}{4400} = \frac{5}{4} = 1\frac{1}{4} = 1.25$
Ans = 25%

74. $3.6 \div 12 = \$0.30$ (12-can)

$2.40 \div 6 = \$0.40$ (6-can)

Ans = 10¢

75. C

$617 \div 50 \div 12$

$12 \times 8 = 96 \div 100$

76. $16 - 1.5 \times 6 = 7^\circ \text{F}$

77. $42.15 \div 3 = 14.05$

$14.05 \times 5 = \$70.25$

78. $900 \div 50000 = 1.8\%$

$80000 \times 1.8\% = \$1440.00$

79. B

$0.84 \div 7 = 0.12$

$0.88 \div 8 = 0.11$ (8-ounce cheaper)

80. A

$1235/50 = 24.7$ (black car, more efficient)

$1456/60 = 24.27$

81. $15 \div 0.5 \times 3 = 90$ packets

82. A

A: $20 \div 4 = 5$ min per arrow

B: $30 \div 5 = 6$ min per arrow

C: $40 \div 6 = 6.6$ min per arrow

D: $50 \div 7 = 7.1$ min per arrow

Ann is the fastest one.

83. $\frac{6(\text{arrows})}{22(\text{min.})} = \frac{9(\text{arrows})}{\Delta(\text{min.})}$
 $9 \times 22 = 198 = 6 \times \Delta$

$\Delta = 33$

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

85. $4 \div 0.01 = 400$ days

86. $2\frac{1}{2} \times 6 = 15$ ft (width)

$3\frac{1}{3} \times 6$ (ft) = 20 ft (length)

87. $3.5 \times 16 = 4$ ft & 8 in

88. $1000 \times \frac{6}{15} = 1000 \times \frac{2}{5} = 400$

89. (a) $3 \times (80 \div 40) = \6

(b) $3 \times (100 \div 40) = \7.50

90. $(120 \div 8) \times 15 = 225$ min

91. $69 \times 10 = 690$

$80 + 60 + 40 + 3 \times 90 + 2 \times 50 = 550$

$690 - 550 = 140$

$140 \div 2 = 70$

92. $176 \div 11 = 16$

$16 = 4^2$

Each square has a side of 4.

$4 \times (4 + 5 + 4 + 1 + 3 + 3 + 3 + 1) = 96$ in

93. B

$1 + 2 + 6 + 4 + 0 + 0 + \dots = *3$

94. $15 - 10 = 5$, she made \$5 for the first transaction.

$25 - 20 = 5$, she made \$5 for the second transaction.

$5 + 5 = 10$

she made a total of \$10 for both transactions.

95. $3 \times 6 + 2 = 20$

$20 \times 3 = 60$

$60 \div 4 = 15$

$15 \div 6 = 2\text{R}3$

So, 2 weeks and 3 days

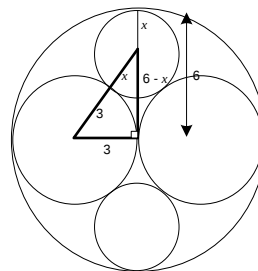
96. B

$(x+3)^2 = 3^2 + (6-x)^2$

$6x + 9 = 9 - 12x + 36$

$18x = 36$

$x = 2$



Answer Key

- | | |
|--|------------|
| 1. $3^{2+4} = 3^6$ | 41. 8000 |
| 2. $10^{2+3} = 10^5$ | 42. 160000 |
| 3. $3^{5-2} = 3^3$ | 43. 729 |
| 4. 3^6 | 44. 900 |
| 5. 5^6 | 45. 27000 |
| 6. $2^2 \times 2^3 = 2^{2+3} = 2^5$ | 46. 4096 |
| 7. 3^7 | 47. 4096 |
| 8. 2^{12} | 48. 1024 |
| 9. 2^7 | 49. 6.25 |
| 10. 2^{36} | 50. 2.25 |
| 11. $(2.5 \times \square) \times 4.6 = 2.5 \times (\square \times 4.6) = 2.5 \times 9.2 \Rightarrow$
$\square \times 4.6 = 9.2 \Rightarrow \square = 2$ | 51. 2 |
| 12. 2^3 | 52. 2 |
| 13. $x^{2+5} = x^7$ | 53. 3 |
| 14. $x^{11-5} = x^6$ | 54. 2 |
| 15. $\frac{1}{x^2}$ | 55. 2 |
| 16. x^{12} | 56. 3 |
| 17. y^4 | 57. 4 |
| 18. x^6 | 58. 2 |
| 19. $x^{4+2+5+7} = x^{18}$ | 59. 3 |
| 20. $\frac{1}{25.5}$ | 60. 2 |
| 21. 100 | 61. 2 |
| 22. 64 | 62. 2 |
| 23. 9 | 63. 2 |
| 24. 81 | 64. 3 |
| 25. 16 | 65. 4 |
| 26. 64 | 66. 2 |
| 27. 64 | 67. 3 |
| 28. 64 | 68. 2 |
| 29. 256 | 69. 3 |
| 30. 81 | 70. 2 |
| 31. 512 | 71. 3 |
| 32. 121 | 72. 4 |
| 33. 1331 | 73. 2 |
| 34. 144 | 74. 3 |
| 35. 169 | 75. 4 |
| 36. 196 | 76. 2 |
| 37. 225 | 77. 3 |
| 38. 289 | 78. 3 |
| 39. 324 | 79. 2 |
| 40. 400 | 80. 2 |
| | 81. 3 |
| | 82. 3 |

MAP 285 (T3) Issue 3 (Spring Packet included)

83. 4
84. 10
85. 11
86. 11
87. 12
88. 8
89. 16
90. 2
91. $2(2x + 1)(4x + 15) = 0$
92. $(x - 5)(8x + 3) = 0$
93. $2(2x + 5)(4x + 3) = 0$
94. $4(x - 3)(8x + 5) = 0$
95. $5(2x - 3)(4x - 5) = 0$
96. $3(x - 1)(8x - 15) = 0$
97. $(x + 6)(8x + 3) = 0$
98. $2(x + 4)(9x - 1) = 0$
99. $4(x + 1)(9x + 4) = 0$
100. $7(3x + 2)(3x - 2) = 0$
101. a) $1/2$
b) 3
c) $y = (1/2)x + 3$
d) -2
e) $y + 2 = -2/1(x - 2)$
f) $y = (-2)x + 2$
102. a) $4/3$
b) 4
c) $y = (4/3)x + 4$
d) $-3/4$
e) $y + 3 = -3/4(x - 8)$
f) $y = (-3/4)x + 3$
103. a) $4/3$
b) 4
c) $y = (4/3)x + 4$
d) $-3/4$
e) $y + 3 = -3/4(x - 8)$
f) $y = (-3/4)x + 3$
104. a) $4/7$
b) 4
c) $y = (4/7)x + 4$
d) $-7/4$
e) $y + 7 = -7/4(x - 8)$
f) $y = (-7/4)x + 7$
105. a) $-7/5$
b) 7
c) $y = (-7/5)x + 7$
d) $5/7$
e) $y - 5 = 5/7(x - 14)$
f) $y = (5/7)x - 5$
106. a) $-2/2$
b) 2
c) $y = (-2/2)x + 2$
d) $x/2 + y/2 = 1$
e)
107. a) $-3/2$
b) 3
c) $y = (-3/2)x + 3$
d) $x/2 + y/3 = 1$
e)
108. a) $-5/2$
b) 5
c) $y = (-5/2)x + 5$
d) $x/2 + y/5 = 1$
e)
109. a) $-6/2$
b) 6
c) $y = (-6/2)x + 6$
d) $x/2 + y/6 = 1$
e)
110. a) $-7/2$
b) 7
c) $y = (-7/2)x + 7$
d) $x/2 + y/7 = 1$
e)

MAP 285 (T3) Spring Bonus Packet

Answer Key

- | | |
|---|--------------------|
| 1. 10^6 | 39. 243 |
| 2. $2^2 \times 2^3 = 2^{2+3} = 2^5$ | 40. 8 |
| 3. $3^4 \times 3^3 = 3^7$ | 41. 32 |
| 4. $2^1 \times 2^3 \times 3^2 \times 3^4 = 2^4 \times 3^6$ | 42. 64 |
| 5. $2^5 \times 2^3 = 2^8$ | 43. 128 |
| 6. $3^5 \times 3^2 = 3^7$ | 44. 3 |
| 7. 2 | 45. 4 |
| $2^6 \div 2^4 = 2^2$ | 46. 8 |
| 8. $= (-5)(-5)(-5)$
$= -125$ | 47. 9 |
| 9. $= -(3)(3)(3) - (-3)(-3) + (-2)(-2)$
$= -27 - 9 + 4$
$= -32$ | 48. 16 |
| 10. $-(3)(3)(3)(3) = -81$ | 49. 16 |
| 11. $(-3)(-3)(-3)(-3) = 81$ | 50. 27 |
| 12. $(-5)^3 = -125$ | 51. 2 |
| 13. $-(-5)^3 = 125$ | 52. 2 |
| 14. $(-y)^4 = y^4$ | 53. 2 |
| 15. $(-x)^5 = -x^5$ | 54. 6 |
| 16. $-(y)^3 = -y^3$ | 55. 2 |
| 17. $x^{2 \times 3} = x^6$ | 56. 4 |
| 18. x^8 | 57. 3 |
| 19. x^2 | 58. 2 |
| 20. x^{15} | 59. 2 |
| 21. 1.96 | 60. $1\frac{1}{2}$ |
| 22. 0.04 | 61. $\frac{3}{4}$ |
| 23. 0.008 | 62. $2\frac{1}{2}$ |
| 24. 0.0016 | 63. $1\frac{2}{3}$ |
| 25. 0.09 | 64. $1\frac{1}{4}$ |
| 26. 0.027 | 65. $\frac{5}{6}$ |
| 27. 0.16 | 66. 3 |
| 28. 0.064 | 67. 2 |
| 29. 0.25 | 68. $1\frac{1}{2}$ |
| 30. 0.125 | 69. $1\frac{1}{5}$ |
| 31. 0.0625 | 70. 2 |
| 32. 0.64 | 71. $1\frac{1}{3}$ |
| 33. 0.512 | 72. $3\frac{1}{2}$ |
| 34. 0.4096 | 73. $2\frac{1}{3}$ |
| 35. 0.36 | 74. $1\frac{3}{4}$ |
| 36. 0.216 | 75. $1\frac{2}{5}$ |
| 37. 3 | |
| 38. 81 | |

MAP 285 (T3) Spring Bonus Packet

76. $2\frac{1}{2}$
77. $1\frac{2}{3}$
78. $1\frac{1}{4}$
79. 4
80. $2\frac{2}{3}$
81. 13
82. 14
83. 15
84. 17
85. 18
86. 20
87. 20
88. 20
89. 30
90. 30
91. $(2x + 21)(3x + 2) = 0$
92. $(x + 42)(6x + 1) = 0$
93. $4(2x + 3)(4x + 1) = 0$
94. $2(x - 1)(8x + 3) = 0$
95. $6(x - 3)(8x + 1) = 0$
96. $8(2x + 1)(4x + 3) = 0$
97. $(x + 6)(8x + 1) = 0$
98. $5(x + 2)(8x + 3) = 0$
99. $2(2x + 9)(4x + 1) = 0$
100. $(8x - 1)(x - 9) = 0$
101. a) $3/4$
b) 3
c) $y = (3/4)x + 3$
d) $-4/3$
e) $y + 4 = -4/3(x - 6)$
f) $y = (-4/3)x + 4$
102. a) $1/2$
b) 4
c) $y = (1/2)x + 4$
d) -2
e) $y + 2 = -2/1(x - 2)$
f) $y = (-2)x + 2$
103. a) 2
b) 6
c) $y = (2)x + 6$
d) $-1/2$
e) $y + 1 = -1/2(x - 4)$
f) $y = (-1/2)x + 1$
104. a) $5/3$
b) 5
c) $y = (5/3)x + 5$
d) $-3/5$
e) $y + 3 = -3/5(x - 10)$
f) $y = (-3/5)x + 3$
105. a) $5/4$
b) 5
c) $y = (5/4)x + 5$
d) $-4/5$
e) $y + 4 = -4/5(x - 10)$
f) $y = (-4/5)x + 4$
106. a) $-5/1$
b) 5
c) $y = (-5/1)x + 5$
d) $x/1 + y/5 = 1$
e)
107. a) $-6/1$
b) 6
c) $y = (-6/1)x + 6$
d) $x/1 + y/6 = 1$
e)
108. a) $-7/1$
b) 7
c) $y = (-7/1)x + 7$
d) $x/1 + y/7 = 1$
e)
109. a) $-8/1$
b) 8
c) $y = (-8/1)x + 8$
d) $x/1 + y/8 = 1$
e)
110. a) $-1/2$
b) 1
c) $y = (-1/2)x + 1$
d) $x/2 + y/1 = 1$
e)