

# Answer Key

- |           |              |
|-----------|--------------|
| 1. N/A    | 45. 14       |
| 2. N/A    | 46. 26       |
| 3. N/A    | 47. 11       |
| 4. N/A    | 48. 5        |
| 5. N/A    | 49. 31       |
| 6. N/A    | 50. 34       |
| 7. N/A    | 51. 27       |
| 8. N/A    | 52. 17       |
| 9. N/A    | 53. 16       |
| 10. N/A   | 54. 16       |
| 11. 60    | 55. 9        |
| 12. 50    | 56. 29       |
| 13. 5     | 57. 9        |
| 14. 30    | 58. 11       |
| 15. 15    | 59. 19       |
| 16. 60    | 60. 32       |
| 17. 5     | 61. A=8, B=1 |
| 18. 30    | 62. A=1, B=3 |
| 19. 10    | 63. A=9, B=5 |
| 20. 20    | 64. A=3, B=6 |
| 21. 16.4  | 65. 95       |
| 22. 13.2  | 66. 91       |
| 23. 9.8   | 67. A=6, B=5 |
| 24. 10.7  | 68. A=1, B=5 |
| 25. 12.2  | 69. A=9, B=8 |
| 26. 4.7   | 70. A=3, B=8 |
| 27. 2.1   | 71. 7        |
| 28. 8.1   | 72. 5        |
| 29. 2.7   | 73. 5        |
| 30. 6.1   | 74. 3        |
| 31. 17.7  | 75. 4        |
| 32. 18    | 76. 9        |
| 33. 10.7  | 77. 9        |
| 34. 15.5  | 78. 8        |
| 35. 13.3  | 79. 6        |
| 36. 12.18 | 80. 9        |
| 37. 13.02 | 81. 156      |
| 38. 8.04  | 82. 126      |
| 39. 12.3  | 83. 145      |
| 40. 7.76  | 84. 40       |
| 41. 3     | 85. 69       |
| 42. 26    | 86. 82       |
| 43. 3     |              |
| 44. 28    |              |

# MAP 220 (T2) Issue 10

87. 56

88. 38

89. 200

90. 120

91.  $28 \div 14 = 2$

92.  $80 \div 4 = 20$

93. A

94. \$2.00

95.  $\frac{1}{2}(30) = 15$

$\frac{1}{3}(15) = 5$

$15 - 5 = 10$

96.  $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8$

$= 4 \times 9$

$= 36$

97.  $6 \times 3 = 18$

98.  $12 \div 6 = 2$  case

99.  $20 \div 6 = 3$  R 2

$3 + 1 = 4$  case

100.  $5 \times 50 = 250$

101.  $8 \times 80 = 640$

102.  $4 \times 7 = 28$

103.  $34 - 16 = 18$

104.  $39 - 27 = 12$

105.  $320 - (600 - 320)$

$= 640 - 600$

$= 40$

106. 15

107.  $10 - 3 = 7$

108.  $10 + 3 = 13$

109.  $7 + 4 = 11$

$20 - 11 = 9$

$11 - 9 = 2$

110.  $65 + 18 + 15 = 98$

# Answer Key

- |  |  |
|--|--|
| 1. $84/100 = 21/25$                        | 41. 6  |
| 2. $88/100 = 22/25$                        | 42. 75   |
| 3. $92/100 = 23/25$                        | 43. 12   |
| 4. $96/100 = 24/25$                        | 44. 45   |
| 5. $6/100 = 3/50$                          | 45. 35   |
| 6. $4/100 = 4\%$                           | 46. 4  |
| 7. $8/100 = 8\%$                           | 47. 12   |
| 8. $12/100 = 12\%$                         | 48. 10   |
| 9. $16/100 = 16\%$                         | 49. 40   |
| 10. $20/100 = 20\%$                        | 50. 7  |
| 11. 18                                     | 51. $47 + 52 = 99$   |
| 12. 40                                     | 52. D  |
| 13. 12                                     | 53. 2  |
| 14. 60                                     | 54. A  |
| 15. 9                                      | 55. $410 - 240 = 170$  |
| 16. $\frac{33}{77} = \frac{3}{7} = 3/7$    | 56. C  |
| 17. $\frac{625}{1000} = \frac{5}{8} = 5/8$ | 57. $410 - 210 = 200$  |
| 18. $\frac{18}{24} = \frac{3}{4} = 3/4$    | 58. $21 - 3 = 18$  |
| 19. $\frac{15}{45} = \frac{1}{3} = 1/3$    | 59. $21 - 7 - 3 = 11$  |
| 20. $\frac{36}{120} = \frac{3}{10} = 3/10$ | 60. $8 \times 12 = 96$   |
| 21. 12 & 2 (Remainder)                     | 61. $43 \times 2 = 86$ hrs   |
| 22. 480                                    | 62. $3.50 \times 80 = 280$   |
| 23. 1 & 8 (Remainder)                      | 63. $42 \div 7 = 6$ cards  |
| 24. 98                                     | 64. $900 \div 2 = 450$   |
| 25. 43.2                                   | 65. $60 \div 2 = 30$<br>width = <u>10</u>  |
| 26. 72                                     | 66. $10 \times 4 = 40$   |
| 27. 19                                     | 67. $100 \times 2 = 200$   |
| 28. 61                                     | 68. $2 \times (8 + 10) = 36$   |
| 29. 6                                      | 69. $36 \div 4 = 9$ in.  |
| 30. 4                                      | 70. $9 \times 9 = 81$ sq. in.  |
| 31. 16                                     | 71. 2009, 2010, 2011, 2012<br>$4 \times 100 = \boxed{400}$                                   |
| 32. 29                                     | 72. $3 \times 4 + 4 \times 2 + 2 \times 2 = 24$<br>$44 - 24 = 20$<br>$20 \div 4 = \boxed{5}$ |
| 33. 73                                     |  |
| 34. 49                                     |  |
| 35. 21                                     |  |
| 36. 429                                    |  |
| 37. 561                                    |  |
| 38. 714                                    |  |
| 39. 775                                    |  |
| 40. 3332                                   |  |

# MAP 230 (T2) Issue 10

73. 106, 106, 115, 151, 124, 142, 133  
205, 250, 214, 241, 223, 232  
304, 340, 313, 331, 322  
403, 430, 412, 421  
502, 520, 511  
601, 610  
700

$$1 + 2 + 3 + \dots + 7 = \boxed{28}$$

74. Each time he gives, the number of candies decreases by 2.

$$15 - 6 \times 2 = \boxed{3}$$

75. 8 is the largest 4-multiple less than 11.

$$8 \div 4 = 2 \text{ (quotient)}$$

$$2 \times 11 + 8 = 30$$

76.  $1 + 2 \times (5 + 3 + 2 + 1) + 2 = 3 + 22 = 25$

$$33 - 25 = 8$$

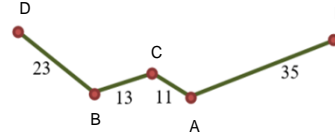
$$8 \div 2 = \boxed{4}$$

77. Since 1 point is taken off for omission or incorrect answer, it gets 0 point essentially. A correct answer receipt 1 point, so it gets 2 points essentially.

$$24 \div 2 = 12$$

$$20 - 12 = \boxed{8}$$

78.  $13 + 11 + 23 = \boxed{47}$



79.  $33 - 24 = \boxed{9}$

80.  $\frac{1}{6} \times 294 = 49$  (seats)

$$49 \times 2 = \boxed{98} \text{ (passengers)}$$

# Answer Key

1. 0.018
2. 0.0032
3. 0.054
4. 0.036
5. 0.36
6. 0.056
7. 0.0048
8. 0.0048
9. 0.081
10. 0.0018
11. 0.036
12. 0.0025
13. 0.0018
14. 0.0015
15. 0.018
16. 0.0042
17. 0.42
18. 0.048
19. 0.0054
20. 0.024
21. 
$$\begin{array}{r} 6 \\ 60 \\ 6 \\ 600 \end{array}$$
22. 
$$\begin{array}{r} 7 \\ 70 \\ 7 \\ 700 \end{array}$$
23. 
$$\begin{array}{r} 9 \\ 90 \\ 9 \\ 900 \end{array}$$
24. 
$$\begin{array}{r} 2 \\ 20 \\ 2 \\ 20 \end{array}$$
25. 
$$\begin{array}{r} 3 \\ 30 \\ 3 \\ 30 \end{array}$$
26. 0.84
27. 0.88
28. 0.92
29. 0.96
30. 0.06

31.  $84/100 = 21/25$
32.  $88/100 = 22/25$
33.  $92/100 = 23/25$
34.  $96/100 = 24/25$
35.  $6/100 = 3/50$
36.  $84/100 = 84\%$
37.  $88/100 = 88\%$
38.  $92/100 = 92\%$
39.  $96/100 = 96\%$
40.  $6/100 = 6\%$
41. 2
42. 16
43. 16
44. 14
45. 7
46. 25
47. 15
48. 120
49. 1
50. 0
51. 
$$\begin{array}{r} \frac{10}{15} \\ - \frac{1}{15} \\ \hline \frac{9}{15} = \frac{3}{5} \end{array}$$
52. 
$$\begin{array}{r} 6\frac{15}{20} \\ - \frac{11}{20} \\ \hline 6\frac{4}{20} = 6\frac{1}{5} \end{array}$$
53. 
$$\begin{array}{r} 3\frac{16}{30} \\ - \frac{25}{30} \\ \hline 2\frac{21}{30} = 2\frac{7}{10} \end{array}$$
54. 
$$\begin{array}{r} \frac{20}{30} \\ - \frac{3}{30} \\ \hline \frac{17}{30} \end{array}$$
55. 
$$\begin{array}{r} \frac{23}{24} \\ + \frac{16}{24} \\ \hline \frac{39}{24} = \frac{13}{8} = 1\frac{5}{8} \end{array}$$
56. 
$$\begin{array}{r} \frac{28}{48} \\ - \frac{18}{48} \\ \hline \frac{10}{48} = \frac{5}{24} \end{array}$$
57. 
$$\begin{array}{r} 3\frac{10}{12} \\ - \frac{12}{12} \\ \hline 3\frac{1}{12} \end{array}$$

# MAP 250 (T2) Issue 10

58. 
$$\begin{array}{r} \frac{22}{30} \\ + \frac{13}{30} \\ \hline \end{array} = 1 \frac{13}{30}$$
59.  $2 \times (3\frac{3}{4} + 8) = 23 \frac{1}{2}$  (inches)
60.  $35\frac{1}{2} + 20\frac{3}{4} + 15\frac{1}{8} = 70\frac{4+6+1}{8} = 71 \frac{3}{8}$  (pounds)
61.  $\frac{4}{24} + \frac{5}{24} = \frac{9}{24} = \frac{3}{8}$
62. 
$$\begin{array}{r} 3\frac{62}{70} \\ + 2\frac{49}{70} \\ \hline \end{array} = 6\frac{41}{70}$$
63. 
$$\begin{array}{r} \frac{7}{16} \\ - \frac{6}{16} \\ \hline \end{array} = \frac{1}{16}$$
64. 
$$\begin{array}{r} 5\frac{11}{35} \\ - 2\frac{7}{35} \\ \hline \end{array} = 3\frac{4}{35}$$
65.  $6 + (\frac{1}{2} + \frac{2}{3} + \frac{1}{4}) = 6 + \frac{6+8+3}{12} = 7\frac{5}{12}$
66. 
$$\begin{array}{r} \frac{9}{12} \\ + \frac{2}{12} \\ \hline \end{array} = \frac{11}{12}$$
67. 
$$\begin{array}{r} \frac{15}{20} \\ + \frac{14}{20} \\ \hline \end{array} = \frac{29}{20} = 1\frac{9}{20}$$
68. 
$$\begin{array}{r} 9\frac{21}{48} \\ - 9\frac{12}{48} \\ \hline \end{array} = \frac{9}{48} = \frac{3}{16}$$
69. 19
70. 65
71. 1/81
72. 1/64
73. 1/1024
74. 1/8
75. 1/16
76. 1/32
77. 4/25
78. 8/125
79. 16/625
80. 32/3125
81. 25/48  
LCD = 48
82. 7/24  
LCD = 24
83. 15/28  
LCD = 28
84. 3/8  
LCD = 4
85. 1/24  
LCD = 24
86. 1/112  
LCD = 112
87. 1/10  
LCD = 10
88. 3/56  
LCD = 56
89. 1/4 (=5/20)  
LCD = 20
90. 7/90 (=14/180)  
LCD = 180
91. Uno = 7, Tom = 10, Sam = 20 (yrs old Sam)
92. 8 + 8 + 8 = 24
93. 21 - 7 - 3 = 11 yrs old
94. Kirk = 10 - 4 = 6 (4 years ago)  
Jake = 12 (4 years ago)  
Jake = 16 (now)
95. (a)  $\frac{11-3}{2} = 4$  (Brandon)  
(b)  $\frac{11+3}{2} = 7$  (Andy)
96.  $12 \times 2 = 24$   
 $24 \times \frac{2}{3} = \underline{16}$  (yrs old Tom)
97.  $12 \times 3 + 7 = 43$
98. Pamela will be 30 years old and Queen will be 10.  
(a) 30 - 3 = 27 years old, Pamela  
(b) 10 - 3 = 7 yrs old, Queen
99. Eden: 18 - 3 = 15 (present)  
15 - 5 = 10 (5 years ago)  
David:  
 $10 \times 2 = 20$  (5 years ago)  
 $20 + 5 = 25$  (present)  
 $25 + 3 = 28$  (yrs old in 3 years, David)
100.  $24 - 6 = 18$   
 $18 \div 2 = 9$   
 $9 - 3 = 6$  years old (for both)
101. I = 10 and J = 30 (3 yrs ago)  
(a)  $10 + 3 = \underline{13}$  (now Issac)  
(b)  $30 + 3 = \underline{33}$  (now James)
102. P = 18 and Q = 6 (in 3 yrs)  
P = 18 - 3 = 15 (now Pamela)  
Q = 6 - 3 = 3 (now Queen)
103.  $48 \times \frac{3}{4} = 36$  (Mark)
104.  $18 \div 3 = 6$  five years ago  
 $6 + 5 = 11$  now  
 $11 + 5 = 16$  (in 5 years)
105. 13&14&15&16&17 (increasing order)
106. [Note:  $(-1)^{\text{even}} = 1$ ,  $(-1)^{\text{odd}} = -1$ ]  
 $(-1)^{1 \times 2 \times 3 \times 4 \times 5} = (-1)^{120} = 1$
107. 70% (120) = 84  
or  
 $84 \div 0.7 = 120$
108. 30%  $\times$  120 = 36
109.  $72 \times \frac{5}{6} = 60$

## MAP 250 (T2) Issue 10

110.  $10000 \times 20\% = 2000$   
 $10000 + 2000 = 12,000$

111.  $184 \div 8 = 23$  (miles)

112.  $105 = 3 \times 5 \times 7$   
 $5 \times 7 = 35$

113. (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)

114. 15

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

116.  $150/200 = \frac{3}{4} = 0.75 = 75\%$

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

118.  $128 \div 16 = 8$  pints a gallon  
 $576 \div 8 = 72$  gal

119.  $1 + 20\% = 1.2$   
 $3,000 \times 1.2 = 3,600$

120.  $5000 \times 1.2 = 6000$   
or  
 $6000 \div 1.2 = 5000$

# Answer Key

- |                       |   |
|-----------------------|---|
| 1. 48                 | 40. 288   |
| 2. 8                  | 41. 1000000   |
| 3. 30                 | 42. 0.008   |
| 4. 24                 | 43. $\frac{125}{216} = 125/216$                                 |
| 5. 14                 | 44. $\frac{9}{64} = 9/64$                                       |
| 6. 19                 | 45. $\frac{49}{64} = 49/64$                                     |
| 7. 18                 | 46. 12  |
| 8. 15                 | 47. 0.05  |
| 9. 3                  | 48. $1\frac{1}{5} = 1 1/5$                                      |
| 10. 0                 | 49. $3\frac{1}{3} = 3 1/3$                                      |
| 11. $x = 5$           | 50. $(\frac{4}{3})^3 = 2\frac{10}{27} = 2 10/27$                |
| 12. $10/7$            | 51. 30  |
| 13. $x = -5$          | 52. 40  |
| 14. $x = 4$           | 53. 50  |
| 15. $x = -2$          | 54. 2   |
| 16. $x = -15$         | 55. 3   |
| 17. $x = 1$           | 56. 5   |
| 18. $5a + 2 = 3a - 7$ | 57. 10  |
| $2a + 2 = -7$         | 58. 11  |
| $2a = -9$             | 59. $1/20$  |
| $a = -9/2$            | 60. $1/30$  |
| 19. 5                 | 61. -16   |
| 20. $x = 3$           | 62. -17   |
| 21. $105 + 15 = 120$  | 63. -12   |
| 22. 75                | 64. -18   |
| 23. $54 + 8 = 62$     | 65. -9  |
| 24. $162 + 21 = 183$  | 66. -7  |
| 25. 70                | 67. -1  |
| 26. $480 + 60 = 540$  | 68. 0   |
| 27. 42                | 69. 2   |
| 28. 184               | 70. 6   |
| 29. 100               | 71. $\frac{1}{2} \times 12 \times 12 = 72$                      |
| 30. 15                | $72 \div 4 = 18$  |
| 31. $2\sqrt{7}$       | $18 \times 6 = \boxed{108 \text{ plants}}$                      |
| 32. $2\sqrt{30}$      | 72. 1 gallon = 16 cups  |
| 33. $4\sqrt{14}$      | $16 \div \frac{4}{3} = 16 \times \frac{3}{4} = 12 \text{ pics}$ |
| 34. $7\sqrt{7}$       | 73. 14 ft $6\frac{1}{2}$ in - 13 ft $10\frac{3}{4}$ in          |
| 35. $4\sqrt{35}$      | $= 1\frac{1}{4} + 6\frac{1}{2}$ in                              |
| 36. 80                | $= 7\frac{3}{4}$ in   |
| 37. 126               | $= 7 3/4$ in  |
| 38. 240               |   |
| 39. 275               |   |



## MAP 260 (T2) Issue 10

74.  $576 \div 8 = 72$

$72 \times 5 = 360$  gal

75. Sharon must have \$50 more than Lindsey.

Sharon = \$80.00

76.  $\text{LCM}(4, 6) = 12$

77.  $8 \times 16 = 128$  oz

78.  $1:30 + 4:20 + 3:00 = 8:50$  pm

79.  $12:00 - 4:20 + 3:00 = 10:40$  am

80.  $320 \times 16 = 5120$  oz

81.  $38 \div 4 = 9.5$  gal

82.  $-15 + 8 - 2 = -9$

83.  $\frac{1}{2}(50^\circ) = 25^\circ$

# Answer Key

- |                              |   |
|------------------------------|---|
| 1. a) $5/4$                  | 18. $3, 1, -7, -133$                        |
| b) $5$                       | 19. $3, 5, -3, -21$                         |
| c) $y = (5/4)x + 5$          | 20. $3, 2, -7, -138$                        |
| d) $-4/5$                    | 21. slope=3, $y=3x+2$                       |
| e) N: $y + 4 = -4/5(x - 10)$ | 22. slope=-4, $y=-4x+3$                     |
| M: $y + 4 = 5/4(x - 10)$     | 23. slope=2, $y=2x-4$                       |
| f) $y = (-4/5)x + 4$         | 24. slope=-3/5, y-intercept=6/5             |
| 2. a) $8/5$                  | 25. slope = $\frac{1}{2}$ , y-intercept=2.5 |
| b) $8$                       | 26. $2x + 3y = 4$                           |
| c) $y = (8/5)x + 8$          | 27. $\frac{1}{2}x - .3y = -3$               |
| d) $-5/8$                    | 28. $2x - 6y = 7$                           |
| e) N: $y + 5 = -5/8(x - 16)$ | 29. $4x + 3y = -8$                          |
| M: $y + 5 = 8/5(x - 16)$     | 30. It is already a standard form.          |
| f) $y = (-5/8)x + 5$         | 31. $(-6, 8)$                               |
| 3. a) $3$                    | 32. $(13, -7)$                              |
| b) $6$                       | 33. $(7/2, -3)$                             |
| c) $y = (3)x + 6$            | 34. $(4, -3)$                               |
| d) $-1/3$                    | 35. $(0, 2)$                                |
| e) N: $y + 1 = -1/3(x - 6)$  | 36. $2\sqrt{6}$                             |
| M: $y + 1 = 3(x - 6)$        | 37. $4\sqrt{7}$                             |
| f) $y = (-1/3)x + 1$         | 38. $6\sqrt{6}$                             |
| 4. a) $-4$                   | 39. $6\sqrt{15}$                            |
| b) $8$                       | 40. $20\sqrt{2}$                            |
| c) $y = (-4)x + 8$           | 41. $6$                                     |
| d) $1/4$                     | 42. $36$                                    |
| e) N: $y - 1 = 1/4(x - 8)$   | 43. $36$                                    |
| M: $y - 1 = -4(x - 8)$       | 44. $7$                                     |
| f) $y = (1/4)x - 1$          | 45. $49$                                    |
| 5. a) $3/2$                  | 46. $7$                                     |
| b) $3$                       | 47. $49$                                    |
| c) $y = (3/2)x + 3$          | 48. $9$                                     |
| d) $-2/3$                    | 49. $81$                                    |
| e) N: $y + 2 = -2/3(x - 6)$  | 50. $81$                                    |
| M: $y + 2 = 3/2(x - 6)$      | 51. $45$                                    |
| f) $y = (-2/3)x + 2$         | 52. $17$                                    |
| 6. $2, 1$                    | 53. $62.5$                                  |
| 7. $-0.4, 0.04$              | 54. $5\sqrt{10}$                            |
| 8. $(2x + 5)^2$              | 55. $7.5\sqrt{13}$                          |
| 9. $(3x + 8)^2$              | 56. $9\sqrt{17}$                            |
| 10. $9, (5x - 3)^2$          | 57. $\sqrt{26}$                             |
| 11. $32, -144, 18$           | 58. $2.5\sqrt{29}$                          |
| 12. $3, -2.4, 25$            | 59. $5\sqrt{34}$                            |
| 13. $27, -36, 14$            |   |
| 14. $27, 36, 11$             |   |
| 15. $27, 54, 17$             |   |
| 16. $3, 3, -4, -37$          |   |
| 17. $3, 5, 2, -37$           |   |

60.  $7.5\sqrt{41}$