

Answer Key

1. 5
2. $5\frac{1}{2}$
 $11 \div 2 = 5 \text{ r } 1$
3. $7\frac{1}{2}$
 $15 \div 2 = 7 \text{ r } 1$
4. $6\frac{1}{3}$
 $19 \div 3 = 6 \text{ r } 1$
5. $7\frac{1}{3}$
 $22 \div 3 = 7 \text{ r } 1$
6. $6\frac{2}{3}$
 $20 \div 3 = 6 \text{ r } 2$
7. $6\frac{1}{4}$
 $25 \div 4 = 6 \text{ r } 1$
8. $7\frac{2}{3}$
 $23 \div 3 = 7 \text{ r } 2$
9. $8\frac{1}{3}$
 $25 \div 3 = 8 \text{ r } 1$
10. $7\frac{1}{4}$
 $29 \div 4 = 7 \text{ r } 1$
11. $7\frac{3}{4}$
 $31 \div 4 = 7 \text{ r } 3$
12. $4\frac{2}{5}$
 $22 \div 5 = 4 \text{ r } 2$
13. $4\frac{4}{5}$
 $24 \div 5 = 4 \text{ r } 4$
14. $6\frac{3}{4}$
 $27 \div 4 = 6 \text{ r } 3$
15. $3\frac{1}{6}$
 $19 \div 6 = 3 \text{ r } 1$
16. $5\frac{2}{5}$
 $27 \div 5 = 5 \text{ r } 2$
17. $4\frac{3}{10}$
 $43 \div 10 = 4 \text{ r } 3$
18. $6\frac{7}{10}$
 $67 \div 10 = 6 \text{ r } 7$
19. $7\frac{9}{10}$
 $79 \div 10 = 7 \text{ r } 9$
20. $8\frac{9}{10}$
 $89 \div 10 = 8 \text{ r } 9$
21. {1, 2, 4}
22. {1, 3, 9}
23. {1, 2, 5, 10}
24. {1, 3, 5, 15}
25. {1, 2, 7, 14}
26. {1, 2, 3, 6}
27. {1, 2, 4, 8}
28. {1, 2, 4, 8, 16}
29. {1, 2, 3, 6, 9, 18}
30. {1, 2, 3, 4, 6, 12}
31. $1\frac{5}{9}$
32. $1\frac{4}{9}$
33. $2\frac{7}{8}$
34. $2\frac{4}{6}$
35. $2\frac{2}{5}$
36. $1\frac{4}{6}$
37. $\frac{1}{4}$
38. $1\frac{2}{5}$
39. $\frac{1}{10}$
40. $\frac{2}{8}$
41. 3
42. 4
43. 5
44. 6
45. 7
46. $1/4$
47. $\frac{5}{6}$
48. $5/6$
49. $3/7$
50. $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$
51. Anita won by $\frac{6}{10} - \frac{4}{10} = \frac{2}{10}$.
52. $\frac{4}{5}$
53. $\frac{2}{8} + \frac{5}{8} = \frac{7}{8}$
 $1 - \frac{7}{8} = \frac{1}{8}$

MAP 230 (T2) Issue 4

54. $5/6$
55. $\frac{3}{4} - \frac{1}{2} = \frac{1}{4}$
56. 30
57. 54
58. 27
59. 24
60. 27
61. $\frac{25}{3}$
 $8 \times 3 + 1 = 25$
62. $\frac{43}{9}$
 $4 \times 9 + 7 = 43$
63. $\frac{47}{10}$
 $4 \times 10 + 7 = 47$
64. $\frac{49}{12}$
 $4 \times 12 + 1 = 49$
65. $\frac{55}{6}$
 $9 \times 6 + 1 = 55$
66. $\frac{32}{7}$
 $4 \times 7 + 4 = 32$
67. $\frac{21}{8}$
 $2 \times 8 + 5 = 21$
68. $\frac{52}{9}$
 $5 \times 9 + 7 = 52$
69. $\frac{87}{10}$
 $8 \times 10 + 7 = 87$
70. $\frac{61}{12}$
 $5 \times 12 + 1 = 61$
71. $22 - 3 - 3 = 16$
72. $12 - 1 = 11$
 $11 \times 2 = 22$ (Elvin's age last year)
 $22 + 1 = 23$
73. $15 - 11 = 4$
74. $1 + 20 = 21$
 $2 + 19 = 21$
...
 $10 + 11 = 21$
 $21 \times 10 = 210$
75. $9 \div 3 \times 2 = 6$ lb (a day)
 $5 \times 6 = 30$ lb
76. D
77. $3 + 1 = 4$ sections
 $4 \times 15 = 60$ feet
78. $80 \div 4 = 20$
 $20 \times 20 = 400$ sq. inches
79. $64 - 46 = 18$ inches
80. $5 \times 12 = 60$
81. $83 - 15 = 68$ cars
82. $28 \div 4 = 7$ pins
83. $6 \times 4 = 24$
 $24 + 8 = 32$
84. $2.5 \times 4 = \$10$
85. $25 \times 2 = 50$
 $25 + 50 = 75$
86. $6 + 3 = 9$
 $2 \times 9 = 18$ feet
87. $8 \times .25 = 2$
 $2 - 1.85 = \$0.15$
88. $2 \times 25 = 50$
 $3 \times 10 = 30$
 $4 \times 5 = 20$
 $50 + 30 + 20 = 100 = 4 \times 25$
4 quarters
89. $56 \times \frac{1}{4} = 14$
 $56 - 14 = \$42$
90. B
91. $6:30 - 0:40 = \underline{5:50 \text{ P.M.}}$
92. $52 \div 2 = \underline{26}$
93. 6050
94. $15 \times \frac{2}{3} = \underline{10}$
95. $121 - 94 = 27$
96. $2 \times (15 + 9) = \underline{48}$
97. D
98. D
99. C
100. 8 corners & 12 edges & 6 faces
101. B
102. $1 + 2 + 3 + 4 + 5 + 6 = \underline{21}$
103. 8 or 9
104. C
105. $2 \times 4 \times 4 = \underline{32}$

Answer Key

- | | |
|-------------------|-----------------------------------|
| 1. 0.56 | 37. 7.5 |
| 2. 0.016 | 38. 5.5 |
| 3. 0.0028 | 39. 6.5 |
| 4. 0.024 | 40. 3.5 |
| 5. 0.63 | 41. 1.75 |
| 6. 0.0035 | 42. 1.5 |
| 7. 0.021 | 43. 6.75 |
| 8. 0.49 | 44. 10.75 |
| 9. 0.042 | 45. 4.25 |
| 10. 0.014 | 46. $8\frac{1}{10}$ |
| 11. 36 | 47. $5\frac{7}{10}$ |
| 12. 54 | 48. $1\frac{1}{10}$ |
| 13. 48 | 49. $7\frac{2}{5}$ |
| 14. 48 | 50. $2\frac{1}{4}$ |
| 15. 42 | 51. $4\frac{3}{4}$ |
| 16. 42 | 52. $10\frac{1}{8}$ |
| 17. 40 | 53. $8\frac{1}{8}$ |
| 18. 40 | 54. $2\frac{3}{8}$ |
| 19. 40 | 55. $8\frac{7}{8}$ |
| 20. 36 | 56. $\frac{49}{9} = 5\frac{4}{9}$ |
| 21. $\frac{1}{2}$ | 57. 75 |
| 22. $\frac{1}{3}$ | 58. 0.9 |
| 23. $\frac{1}{5}$ | 59. 0.25 |
| 24. $\frac{2}{3}$ | 60. 0.2 |
| 25. $\frac{3}{4}$ | 61. 0.06 |
| 26. $\frac{2}{5}$ | 62. $\frac{2}{3}$ |
| 27. $\frac{4}{5}$ | 63. 0 |
| 28. $\frac{2}{7}$ | 64. 28% |
| 29. $\frac{3}{7}$ | 65. 40 |
| 30. $\frac{4}{7}$ | 66. B |
| 31. $\frac{6}{7}$ | 67. A |
| 32. $\frac{3}{8}$ | 68. B |
| 33. $\frac{7}{8}$ | 69. C |
| 34. $\frac{2}{9}$ | 70. C |
| 35. $\frac{8}{9}$ | 71. C |
| 36. 10.5 | 72. \$72.00 |
| | $6 \times 12 = 72$ |

MAP 240 (T2) Issue 4

73. 9 (T-shirts)
 $108 \div 12 = 9$

74. D

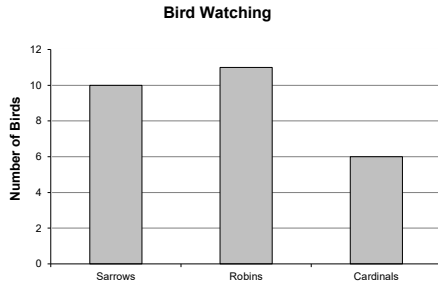
75. A

76. A

77. D

78. #sparrows = 10
 #robins = 11
 #cardinals = 6

79.



80. $\frac{2}{5}$

81. C

82. B

83. A

84. 6 plain balloons, 4 fancy ones

If he bought 5 of each, the cost would be $\$0.28 \times 5 = \1.40 , but he only paid \$1.36. There is a difference of $\$1.40 - \$1.36 = \$0.04$. He must have bought more plain balloons than fancy ones. Each plain balloon cost 4¢ less, so he purchased 6 plain balloons and 4 fancy balloons.

85. A

86. 10 matches needed
 RY, RG, RB, RW,
 YG, YB, YW,
 GB, GW, and
 BW.

87. D

$$5 \times 0.5 = 2.5$$

$$50 \div 2.5 = 20$$

88. $42.15 \div 3 = 14.05$
 $14.05 \times 5 = \$70.25$

89. $50 \div (2 + 3) = 10$
 $10 \times 2 \times 40 = 800$ times

90. $1\frac{1}{4} : 2\frac{1}{2} = 1:2$
 $3 \times 2 = 6$ cups

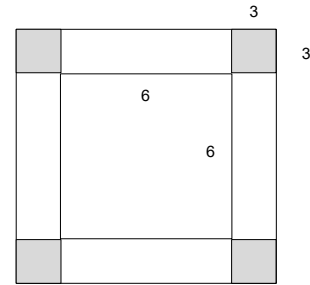
91. Julio = 15
 Erin = 30
 Kesha = 37
 Total = 82

92. (a) $47 - 3 - 14 - 1 - 14 = 15$
 (b) $97 - 47 = 50$ B.C.

93. $6849 - 6750 = 99$

94. $10 \times 10 \times 10 \times 10 = 10,000$

95. $144 = 12^2$
 $144 - 108 = 36$
 $36 \div 4 = 9$
 $9 = 3^2$
 $12 - 2 \times 3 = 6$
 $6 \times 6 \times 3 = 108 \text{ in}^3$



96. $144 \div 24 = 6$ gal

97. $1 - \frac{1}{2} = \frac{1}{2}$ (one half left)
 $\frac{1}{2} - \frac{1}{3} = \frac{1}{6}$
 30 pages account for $\frac{1}{6}$ of the book.
 $30 \div \frac{1}{6} = 180$ pages

98. The decrease of 8 fewer pencils results in a difference of
 $8.45 - 6.05 = 2.40$.
 Each pencil costs
 $2.40 \div 8 = 0.30$.
 Therefore, 2 dozen pencils cost
 $24 \times 0.30 = 7.20$
 We conclude that a pen cost
 $8.45 - 7.20 = \$1.25$

99. D
 $3 \times 4 = 12$
 $2(3 + 4) = 14$

100. $11\frac{9}{10} \div 2\frac{1}{3}$
 $= \frac{119}{10} \div \frac{7}{3}$
 $= \frac{119}{10} \times \frac{3}{7}$
 $= 5.1$ hour
 $= 5$ hours & 6 minutes

Answer Key

1. $1\frac{4}{15}$
2. $\frac{2}{5}$
3. $\frac{4}{9}$
4. 90
5. $\frac{2}{9}$
6. $\left(\frac{16}{5}\right)\left(\frac{25}{8}\right) = 10$
7. $\left(\frac{21}{4}\right)\left(\frac{12}{7}\right) = 9$
8. 4
9. 15
10. 9
11. 4
12. 18
13. 36
14. 6.4
15. 37.5
16. 70
17. 24
18. 75.6
19. 20%
20. 40%
21. 50%
22. 70%
23. 80%
24. 30
25. 150
26. 125
27. 40
28. 48
29. 70
30. 120
31. $\frac{2}{5}$
32. $\frac{1}{8}$
33. $1\frac{1}{4}$
34. $3\frac{1}{4}$
35. $3\frac{3}{4}$
36. 125%
37. 120%
38. 225%
39. 375%
40. 404%
41. $.25\% \times 40 = 0.0025 \times 40 = 0.1$
42. 24
43. 0.576
44. 9999
45. 580
46. 300000
47. 130%
48. 280
49. 80
50. 510
51. 2.5
52. 100
53. 246
54. 86.3
55. $\frac{1}{9} = 1/9$
56. $4 \times 5 = 20 = 10 \times \Delta$, therefore, $\Delta = 2$
57. 1
58. 90
59. 0.7
60. 4
61. 1
62. 196
63. $1\frac{2}{3}$
64. 190
65. $3 \times 5 = 15$
 $15 \div 7 = 2R1$
Ans = 1 (remainder)
66. Daryl: 80
Evan: 120
 $400 - 80 - 120 = 200$
67. $\frac{200 - 2 \times 30}{2} = 70$
68. Since the travel time is 60 min, in which there are 12 trains on the way and 12 more trains to start from Y to X. There will be 24 trains that a train from X to Y will meet.
 $24 - 1 = 23$ (trains)
69. $60 + 60 \times 5\% = 60 + 3 = \63.00
70. $48 \times \frac{5}{2} = 120$ in
71. $12 \times \frac{2}{5} = 12 \times 0.4 = 4.8$ yd
 4.8 yd = 14 ft & 4.8 in

MAP 250 (T2) Issue 4

72. $2 + 5 = 7$
 $7 \times 2 = 14$
 $42 \div 14 = 3$
 (a) $3 \times 2 = 6$ (W)
 (b) $3 \times 5 = 15$ (L)
73. $31.5 - 30 = \$1.50$
74. $1.5 \div 30 = 0.05 = 5\%$
75. $30 \times 30 = 900$
 $900 \times 6 = 5400 \text{ in}^2$
76. $80\%(40) = 0.8 \times 40 = \32.00
77. $150 - 30 = \$120.00$
78. $80\%(125) = 100$
 or
 $100 \div 0.8 = \$125$
79. B
80. (a) $\square = 0.8, \Delta = 12$
 (b) $40 \times 12 = \$480.00$
81. 6 square units
82. A
- | | | | | | | |
|--|---|---|---|---|---|--|
| | 1 | 2 | 3 | 4 | 5 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
83. 24 tiles
84. $7 \times 4 + 4 = 4 \times (7 + 1) = 4 \times 8 = 32$ (tiles)
85. $4 \times (n + 1)$
86. Figure 39
 $4 \times (39 + 1) = 160$
87. C
88. B
89. A
90. 20%
 $100\% - (25\% + 35\% + 20\%) = 20\%$
91. 75 acres
 $25\% \times 300 = 75$
92. No
 Wheat = 25%
 Bean = 20%
 $25\% + 20\% = 45\% < 50\%$
93. C
94. B
95. D
96. C
97. C
98. B
99. C
100. D

Answer Key

1. $11 - (-13) = 24$
2. $-3 + (-2 - 5)$
 $= -10$
3. 3
4. $1 + (-2 + 3) + (-4 + 5) + (-6 + 7) + (-8 + 9)$
 $= 1 + 1 + 1 + 1 + 1$
 $= 5$
5. -1
6. -8
7. 42
8. -2
9. -8
10. 8
11. -0.24
12. 12
13. 1200
14. 20
15. 3000
16. $20\% \times \square = 30 \Rightarrow 0.2 \times \square = 30 \Rightarrow \square = 150$
17. 100
18. 600
19. $\frac{2}{5} \times 20 = 8$
20. 25.8
21. 5.25
22. 400%
23. $20 \times 90\% = 18$
or
 $18 \div 20 = 90\%$
24. 6.25
25. $\frac{1}{3} \times 60 = 20$
26. $30 \div 40 = 0.75 = 75\%$
27. 120
28. 400%
29. 200
30. 35.6
31. $60 \times (1 - 0.3) = 60 \times 0.7 = \42
32. D
33. C
34. $3 \times 5 = 15$ mi
35. $16\frac{1}{8} - 14\frac{3}{4} = 14\frac{3}{8}$
 $14\frac{3}{8} \div 7 = 2\frac{3}{56} = 2 \frac{3}{56}$
36. Method I)
Let x be the number of students.
 $4x + 10 = 5(x - 2) - 10$
 $4x + 10 = 5x - 20$
 $x = 30$
Method II)
 $2 \times 4 + 10 = 18$ (leftover books if 2 students take none)
 $18 \times (5 - 4) + 10 = 28$ (number of students who take 5 books)
 $28 + 2 = 30$ (total number of students)
37. $2 \times 20 = 40$ ft per minute
 $1000 \text{ yd} = 3000 \text{ ft}$
 $3000 \div 40 = 75 \text{ min} = 1\frac{1}{4} \text{ hr}$
38. $\text{LCM}(4, 6) = 12$
39. $T = D/S = 300/50 = 6$ (hr)
40. $191 \times 2 + 1 = 382 + 1 = 383$
41. .00005
42. $\frac{180}{45} \times (4 + 3.5) = 30$ hrs
43. $\frac{7}{16}$
44. $15 \div (3^2 - 2^2) = 3$
 $5 + 3 = 8$
 $8 \div 2 = 4$
45. $300 - 60 = 240$
 $240 \div 5 = \$48.00$
46. $10/80 = \frac{1}{8} = 0.125 = 12.5\%$
47. $5 \times 4 = \underline{20 \text{ words}}$
Note that the order does matter in this problem.
The first set has 10 words:
AB, AC, AD, AE,
BC, BD, BE,
CD, CE,
DE.
The second set also has 10 words: BA, CA, DA,
EA, CB, DB, EB, DC, EC, and, ED. (Each word in the second set is nothing but the reverse of a word from the first set.)
48. Let AB mean that Alex is the chair and Ben is the vice-chair. Ans = 20 possible outcomes
49. The order does not matter in this problem.
Ans = 10 outcomes
AB, AC, AD, AE, BC, BD, BE, CD, CE, and DE.
50. The order does not matter. Ans= 10 matches needed
RY, RG, RB, RW, YG, YB, YW, GB, GW, and BW.
51. 60°

MAP 260 (T2) Issue 4

52. D

53. $120 + 240 = 360$ miles

54.
$$= \frac{\text{Total distance}}{\text{Total time}}$$
$$= \frac{360}{5}$$
$$= 72 \text{ miles per hour}$$

	Math	English	PE	Biology
Alice	x		✓	x
Brenda	x (iii)		x (iii)	✓
Chad	✓		x (i)	x
Daniel	x (ii)	✓	x (i)	x (ii)

55.

(a) C (Math)

(b) A (PE)

(c) D (English)

(d) B (Biology)

56. $650 - 50 = 600$

$600 \div 5 = \$120.00$

57. $\frac{3}{4} \times (-12)^2 = \frac{3}{4} \times 144 = 108$

58. Method I) (Labor free)

$24.95 - 18.95 = 6$

$6 \times 22 = 132$

$132 - 18.95 = \$113.05$

Method II) (Labor needed)

$24.95 \times 22 - 18.95 \times 23 = 113.05$

59. $10^2 = 100$

$10 \times 4 = 40$

$\sqrt{9} = 3$

$40 \times 3 = 120$ inches

60. $\frac{4}{3.2} \times 16 = 20$ (oz)
 $\frac{20}{5} = 4$ (min)

61. $45\% \text{ of } 40 = 0.45 \times 40 = 18$

62. perimeter = 16

area = 9

surface = $9 \times 2 + 16 = 34 \text{ cm}^2$

63. $\frac{98-49}{50} = 0.98 = 98\%$

64. $\frac{0.02}{100} = \frac{2}{10000} = \frac{1}{5000} = 1/5000$

65. $\frac{1}{4} \times 120 = 30$

66. $120 \div \frac{4}{5} = 150$

or $120 + 30 = 150$

67. C

68. $825 - 15 = 810$

$8 + 1 = 9$

$810 \div 9 = 90$ (smaller)

$825 - 90 = 735$ (larger)

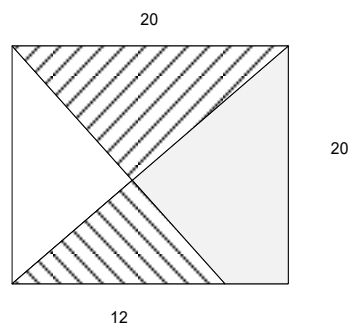
69. 155

Compare two striped triangles below. The side ratio is $20 : 12 = 5:3$, so the height ratio is $5:3$. The

height of the bottom (smaller) triangle is $20 \times \frac{3}{8} =$

$\frac{15}{2}$, so the area is $12 \times 7.5 \div 2 = 45$.

The area of the shaded pentagon is $200 - 45 = 155$.



70. $\frac{18}{40} = 0.45$ hour

71. $\frac{1}{10} = 1/10$

72. -9

73. 1.1

74. .064

75. .002

76. 10,000

77. 250%

78. $30\% \times 24 = 7.2 = 7 \text{ hr \& } 12 \text{ min}$

79. 35%

80. 16

81. 4.5

82. $5 \times \frac{17}{60} - \frac{1}{6} = \frac{15}{12} = 1\frac{1}{4} = 1 \frac{1}{4}$

83. $156 = 26 \times 6$

$130 = 26 \times 5$

LCM = $26 \times 6 \times 5 = 780$

84. $6\frac{19}{48} = 6 \frac{19}{48}$

85. $40 \div 8 = 5$

$3 \times 5 \times 5 = 75 \text{ in}^2$

86. $10 \times 3 = 30$ (sum)

$30 - 5 - 11 = 14$ (Charles)

87. $11^2\pi - 10^2\pi = 21\pi = 21 \text{ pi}$

88. 60°

89. $300 \div 20 = 15$

90. $18 \div 60 = 0.3$ (hr)

$80 \times 0.3 = 24 \text{ mi}$

Answer Key

1. $4/10 = \frac{2}{5} = 0.4 = 40\%$
2. 120%
3. 150%
4. Since $26 \div 20 = 1.30 = 130\%$
5. 1300
6. $20\% \times 750 = 150$
7. $83\frac{1}{3}\% = 83\frac{1}{3}\%$
8. 87
9. 104.5
10. $140 \times 85\% = 119$
11. 0.04
12. 0.25
13. 4.56
14. 346
15. 340
16. 252
17. 51400
18. 1440000
19. 62500
20. $2\frac{2}{3} + 3\frac{3}{4} - 5\frac{1}{10} = \frac{2}{3} + \frac{3}{4} - \frac{1}{10} = \frac{79}{60} = 1\frac{19}{60} = 1\frac{19}{60}$
21. 24
22. .6
23. $\frac{21}{10} = 2\frac{1}{10} = 2\frac{1}{10}$
24. 0.7
25. $180 \div 12 = 15$
 $15 \div 3 = 5$ yd
26. 3
27. 560000
28. 9
29. 18
30. $\frac{2}{3} = 2/3$
31. 125
32. 0.024
33. 14.62
34. $6,000,000 \times 10\% = 6,000,000 \times 0.1 = \$600,000$
35. $1\frac{3}{4} \times 4 \times 3 = 21$ (hours)
36. $2000 \times 25\% = 2000 \times 0.25 = 500$
37. 3157
38. $2(\text{quarter circle}) \setminus \text{square}$
 $= 200\pi - 400 = 228$

shaded area
 $= \text{the square} - \text{the leaf}$
 $= 400 - 228$
 $= 172$
39. $60 \div .03 = 2000$
40. $32000 \div 400 = 80$ sec = 1 min & 20 sec
41. $(-1)^{\text{even}} = 1$
[Note: $(-1)^{\text{even}} = 1, (-1)^{\text{odd}} = -1$]
42. $\frac{45 \times 16}{2880} = \frac{720}{2880} = \frac{1}{4}$
43. 0.125
44. 17
45. 5
46. 2
47. $2(x - \frac{1}{2}) + 3(x + \frac{1}{3}) = 60$
 $5x = 60$
 $x = 12$
48. $y = 2$
49. 192
50. $x = 180^\circ - 2(30^\circ) = 120^\circ$
51. $\angle BAC = 180^\circ - 65^\circ - 35^\circ = 80^\circ$.
 $x = \frac{1}{2}(80) = 40$
52. $2\frac{1}{4}$
53. $9 \times 10 \times 10 \times 10 = 9000$
54. $\frac{5}{6}(400 - 100)\pi = 250\pi = 250\pi$
55. A – B
 $= (2 + 4 + 6 + \dots + 100) - (1 + 3 + 5 + \dots + 99)$
 $= (2 - 1) + (4 - 3) + \dots + (100 - 99)$
 $= 50$
56. Let's use x for the number to be found. According to the statement, we have
 $4x + 2 = 30$
 $\Rightarrow 4x = 28$
 $\Rightarrow x = 7$
57. $5 - \frac{1}{2} = 4\frac{1}{2}$ hr
 $\frac{270}{4.5} = 60$ mph
58. 19
59. $1200 - 90 = 1110$
 $1110 \div 15 = 2220 \div 30 = 222 \div 3 = 74$
60. \$1 U.S. dollar is worth 0.60 English pound.
\$450 is worth $450 \times 0.6 = 270$ English pounds
61. B

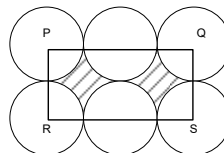
MAP 270 (T2) Issue 4

- | | |
|-------|---|
| 62. B | 73. (3, 5) and (6, 7) |
| 63. C | 74. (any of the following ordered pairs): |
| 64. A | (2, 5) |
| 65. A | (4, 7) |
| 66. B | (6, 9) |
| 67. B | (8, 11) |
| 68. C | 75. D |
| 69. D | 76. B |
| 70. B | 77. D |
| 71. C | 78. D |
| 72. D | 79. D |
| | 80. 80 |

Answer Key

1. 126.5
2. 3 & 4
3. 100
4. $0.05 = \frac{1}{20}$
5. 0.4601
6. 155
7. Fibonacci pattern
 $1 + 1 = 2$
 $1 + 2 = 3$
 ...
 $13 + 21 = \underline{34}$
8. 10201
9. $12 \times 6 = 72$, $13 \times 7 = 91$
 ans = 8 & 112
10. 13.03
11. $0.5 \times 5 \times 50 = 125$
12. 625
13. 1216
14. .06
15. $1/25$
16. 1,400
17. $0 + 6 + 18 + 36 + 60$
 $= 6(0 + 1 + 3 + 6 + 10 + 15 + 21 + 28 + 38 + 45)$
 $= 6(20 + 60 + 87)$
 $= 6 \times 167$
 $= \underline{1002}$
18. 0.5
19. 10
20. $2/5$
21. $180 \div (3 + 4 + 5) = 15$
 the largest measure is $5 \times 15 = 75$
 the least measure is $3 \times 15 = 45$
 the difference is $75 - 45 = 30$
22. $BM = 15 \times \frac{3}{2} = 22.5$
 $M = 13 + 22.5 = 35.5$
23. $500 \times 20\% = 100$ (spent)
 $500 - 100 = 400$
 $400 \times 25\% = 100$ (spent)
 $100 + 100 = 200$
24. C
 21, 25
 12, 10
 52, 50

25. D
 $PR = 10$, $PQ = 20$, $\text{area}(ABCD) = 200$. The area of each circle is 25π . The shaded region = rectangle $\setminus$ 2 circles. Thus, its area is $= 200 - 2(25\pi) = 200 - 50\pi$



26. D
27. $2x + 11 = 3x - 32$
 $x = 32 + 11 = 43$
28. $y = 3$
29. B
30. D
 $x^2 + 25 = 10x$
 $(x - 5)^2 = 0$
 $x = 5$
31. A
 Let $x =$ increment on each side. Then, we have
 $(x + 20)(x + 30) = 20 \times 30 + 104$
 $x^2 + 50x = 104$
 $x^2 + 50x - 104 = 0$
 $(x - 2)(x + 52) = 0$
 $x = 2$ (-52 is ridiculed)
 The new length is $30 + 2 = 32$.
32. A
 Let x be the width of the deck.
 Then, 400 is the area difference of the outer rectangle and the inner rectangle.
 $(2x + 18)(2x + 24) - 18 \times 24 = 400$
 $4x^2 + 84x - 400 = 0$
 $x^2 + 21x - 100 = 0$
 $(x - 4)(x + 25) = 0$
 $x = 4$ (-25 is ridiculed)
33. B
34. C
35. A
 $0.7 \div 5\% = 0.7 \div 0.05 = 0.7 \times 20 = 14$
36. D
 $75 \times 64\% = 48$
37. A
 $-11 \times -12 = 132$
38. B

MAP 280 (T2) Issue 4

39. A

Let x = number packets at \$1.00; $x + 50$ = the number of packets at \$1.26. Therefore, we have

$$x + 1.26(x + 50) = 402$$

$$2.26x + 63 = 402$$

$$2.26x = 339$$

$$x = 150$$

40. C

$$0.7 \times 17 = 11.9$$

$$0.6 \times 17 = 10.2$$

$$0.4 \times 17 = 6.8$$

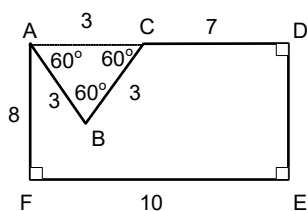
$$0.3 \times 17 = 5.1$$

41. D

42. B

43. B

44. $2(8 + 10) + 3 = \boxed{39}$



45. B

46. D

47. D

48. $\frac{9}{11} = 0.8181\ldots \boxed{8}1$

49. B

50. C

51. D

52. C

53. C

54. D

55. 15:48

$$= 5:16$$

56. D

57. B

$$3 \times 3 = 9$$

$$9 \div 7 = 1R2$$

58. \$25.00

59. $35 \div 5 = 7$

60. C

61. $12.5 + 7.5 = 20$ (half-perimeter)

$$2 \times 20 = \boxed{40 \text{ cm}}$$

62. $34 \div 2 = 17$ (half-perimeter)

$$17 - 5 = \boxed{12 \text{ in}}$$

63. $360 \div 2 = 180$

$$(180 - 10) \div 2 = \boxed{85 \text{ in}}$$

64. $40 \div 2 = 20$

$$20 - 11 = \boxed{9}$$

65. $(22 - 2 \times 4) \div 2 = 7$ ft. Therefore, the other sides are 4, 7, and 7.

66. $20 \times 40 = 800$

67. $10^2 \times 3.14 = 314$

$$314 \times 4 = 1256$$

68. T

69. $60 \div 2 = 30$

L = 20 (length)

W = 10 (width)

70. 10 in

71. $10 \times 4 = 40$

72. $10 \times 10 = 100$

73. $100 \times 2 = 200$

74. $12 \div 4 = 3$, $3 \times 3 \times 3 = 27 \text{ in}^2$

75. $3 \times 3 = 9$

$$2(3+9) = 24 \text{ in}$$

76. $4^6 = 4^5 \times 4 = 4096$

77. $8 + 6 = 14$

78. 0.5

79. $2x = 1.5$

$$x = 0.75 = \frac{3}{4}$$

80. $2^{3\sqrt{x}} = 4^x = 2^{2x}$

$$3\sqrt{x} = 2x$$

$$1.5 = \sqrt{x}$$

$$x = 2.25$$