

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 (T1) 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. $6\frac{3}{4}$
2. $3\frac{2}{6}$
3. $3\frac{2}{8}$
4. $3\frac{2}{9}$
5. $3\frac{3}{6}$
6. $6\frac{2}{4}$
7. $4\frac{1}{6}$
8. $3\frac{2}{8}$
9. $4\frac{3}{9}$
10. $4\frac{1}{6}$
11. $\frac{25}{3}$
 $8 \times 3 + 1 = 25$
12. $\frac{43}{9}$
 $4 \times 9 + 7 = 43$
13. $\frac{47}{10}$
 $4 \times 10 + 7 = 47$
14. $\frac{49}{12}$
 $4 \times 12 + 1 = 49$
15. $\frac{55}{6}$
 $9 \times 6 + 1 = 55$
16. $\frac{32}{7}$
 $4 \times 7 + 4 = 32$
17. $\frac{21}{8}$
 $2 \times 8 + 5 = 21$
18. $\frac{52}{9}$
 $5 \times 9 + 7 = 52$
19. $\frac{87}{10}$
 $8 \times 10 + 7 = 87$
20. $\frac{61}{12}$
 $5 \times 12 + 1 = 61$
21. $6\frac{2}{3}$
 $20 \div 3 = 6 \text{ r } 2$
22. $7\frac{1}{3}$
 $22 \div 3 = 7 \text{ r } 1$
23. $5\frac{2}{3}$
 $17 \div 3 = 5 \text{ r } 2$
24. $13\frac{1}{3}$
 $40 \div 3 = 13 \text{ r } 1$
25. $4\frac{1}{4}$
 $17 \div 4 = 4 \text{ r } 1$
26. $8\frac{3}{4}$
 $35 \div 4 = 8 \text{ r } 3$
27. $10\frac{1}{4}$
 $41 \div 4 = 10 \text{ r } 1$
28. $3\frac{1}{5}$
 $16 \div 5 = 3 \text{ r } 1$
29. $7\frac{2}{5}$
 $37 \div 5 = 7 \text{ r } 2$
30. $4\frac{1}{6}$
 $25 \div 6 = 4 \text{ r } 1$
31. $4\frac{5}{6}$
 $29 \div 6 = 4 \text{ r } 5$
32. $8\frac{1}{3}$
 $25 \div 3 = 8 \text{ r } 1$
33. $8\frac{2}{3}$
 $26 \div 3 = 8 \text{ r } 2$
34. $5\frac{1}{4}$
 $21 \div 4 = 5 \text{ r } 1$
35. $7\frac{3}{4}$
 $31 \div 4 = 7 \text{ r } 3$
36. $4\frac{1}{5}$
 $21 \div 5 = 4 \text{ r } 1$
37. $3\frac{3}{5}$
 $18 \div 5 = 3 \text{ r } 3$
38. $5\frac{1}{6}$
 $31 \div 6 = 5 \text{ r } 1$
39. $2\frac{1}{10}$
 $21 \div 10 = 2 \text{ r } 1$
40. $4\frac{7}{10}$
 $47 \div 10 = 4 \text{ r } 7$
41. $1\frac{2}{8}$
42. $1\frac{2}{9}$
43. $1\frac{2}{10}$
44. $1\frac{3}{4}$
45. $1\frac{3}{5}$
46. $1\frac{3}{6}$
47. $1\frac{3}{7}$
48. $1\frac{3}{8}$
49. $1\frac{3}{9}$
50. $1\frac{3}{10}$
51. 63
52. 24
53. 12
54. 28
55. 40
56. 6
57. 21
58. 14
59. 14
60. 32
61. $\frac{1}{2}$
62. $\frac{8}{9}$
63. $\frac{1}{7}$
64. $\frac{3}{7}$
65. $\frac{8}{11}$
66. $\frac{7}{11}$
67. $\frac{2}{7}$
68. $\frac{1}{8}$
69. $\frac{9}{11}$
70. $\frac{2}{5}$
71. $\frac{2}{3}$
72. $\frac{3}{5}$
73. $\frac{1}{3}$
74. $\frac{1}{5}$
75. $\frac{1}{4}$
76. $\frac{1}{9}$
77. $\frac{2}{9}$
78. $\frac{3}{10}$
79. $\frac{1}{6}$
80. $\frac{3}{4}$
81. 2.5
82. 10.75
83. 10.5
84. 1.5
85. 2.75
86. 9.5
87. 3.25
88. 10.25
89. 4.75
90. 4.75
91. $10\frac{1}{2}$
92. $6\frac{1}{4}$
93. $7\frac{3}{4}$
94. $5\frac{1}{2}$
95. $9\frac{3}{5}$
96. $8\frac{1}{10}$
97. $10\frac{1}{4}$
98. $4\frac{3}{4}$
99. $6\frac{1}{4}$
100. $2\frac{1}{8}$
101. $3 + 1 = 4$
 $12 \div 4 = 3$ apples
102. $5280 \div 6 = 880$ feet
103. $5 \times 125 = 625\text{¢} =$
\$6.25
104. $63 \div 7 = 9$ colors
105. 40
106. 30 dimes
107. 5 dimes = 2 quarters,
20 dimes = 8 quarters
108. 7 Q & 2 D
109. $3 \times 0.25 + 2 \times 0.10 =$
0.95

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110. 2 dimes & 8 nickels.

111. $\frac{1}{4}$

112. $108 \div 12 = 9$ yrs old

113. $2 \times 0.75 + 0.80 =$
\$2.30

114. 7 (tickets) $\times 22 = 154$
 $160 - 154 = \$6$
(change)

115. $15 \div 3 = 5$ hours

Answer Key

- | | | | |
|----------------------|----------------------|--|---|
| 1. $58\frac{3}{10}$ | 6. $97\frac{1}{6}$ | 11. $6/7$ | 18. $3/5$ |
| 2. $84\frac{1}{3}$ | 7. $38\frac{1}{2}$ | 12. $2/9$ | 19. 2.5 |
| 3. $45\frac{1}{2}$ | 8. $59\frac{1}{2}$ | 13. $4/5$ | 20. 10.75 |
| 4. $62\frac{2}{3}$ | 9. $39\frac{3}{5}$ | 14. $7/9$ | |
| 5. $16\frac{1}{2}$ | 10. $73\frac{1}{3}$ | 15. $8/9$ | |
| | | 16. $2/3$ | |
| | | 17. $5/6$ | |
| 21. 10.5 | 26. 10.25 | 31. 9 | 36. 18 |
| 22. 1.5 | 27. 4.75 | 32. 32 | 37. 24 |
| 23. 2.75 | 28. 4.75 | 33. 18 | 38. 30 |
| 24. 9.5 | 29. 27 | 34. 24 | 39. $\frac{1}{144}$ |
| 25. 3.25 | 30. 12 | 35. 42 | 40. $\frac{109}{120}$ |
| | | | |
| 41. $\frac{13}{50}$ | 46. $\frac{49}{192}$ | 51. 63 | 56. 80 |
| 42. $\frac{2}{135}$ | 47. $\frac{61}{72}$ | 52. 69 | 57. 75 |
| 43. $\frac{29}{140}$ | 48. $\frac{79}{600}$ | 53. 62 | 58. 81 |
| 44. $\frac{32}{135}$ | 49. 64 | 54. 70 | 59. $\frac{2}{3}$ |
| 45. $\frac{41}{288}$ | 50. 68 | 55. 76 | 60. $\frac{5}{6}$ |
| | | | |
| 61. $\frac{5}{9}$ | 66. $\frac{25}{64}$ | 71. $1/2$ | 76. $4/9$ |
| 62. $\frac{15}{16}$ | 67. $\frac{64}{105}$ | 72. $1/6$ | 77. $2/3$ |
| 63. $\frac{18}{25}$ | 68. $\frac{3}{4}$ | 73. $5/3$ | 78. $3/10$ |
| 64. $\frac{7}{32}$ | 69. $2/5$ | 74. $3/4$ | 79. 2.5 |
| 65. $\frac{8}{45}$ | 70. $2/3$ | 75. $3/4$ | 80. 16 |
| | | | |
| 81. 750 | 88. 0.125 | 93. $\frac{1}{6}$ | 98. 63 |
| 82. 12.5 | 89. 6 | 94. $\left(\frac{10}{3}\right)\left(\frac{6}{5}\right) = 4$ | 99. 30 ft |
| 83. 1.5 | 90. $\frac{1}{20}$ | 95. $\left(\frac{14}{3}\right)\left(\frac{9}{7}\right) = 6$ | 100. 2400 |
| 84. 8 | 91. $\frac{1}{6}$ | 96. $\left(\frac{18}{5}\right)\left(\frac{10}{9}\right) = 4$ | |
| 85. 250 | 92. $\frac{2}{5}$ | 97. 15 | |

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101.

102. $4 \div \frac{2}{3} = 6$ commercials

103. $(4\frac{1}{4} + 5 + 6\frac{5}{8}) - (5 + 2\frac{1}{3} + 8\frac{1}{4})$
 $= (\frac{1}{4} + \frac{5}{8}) - (\frac{1}{3} + \frac{1}{4})$
 $= \frac{7}{24}$ hr

104. $\frac{1}{5}(4\frac{1}{4} + 2\frac{1}{2} + 5 + 4\frac{3}{4} + 3\frac{1}{2})$
 $= \frac{1}{5}(20)$
 $= 4$

105. 8 hours and 45

minutes
 $3\frac{1}{2} + 5\frac{1}{4}$
 $= 8\frac{3}{4}$ hours
 $= 8$ hours and 45 minutes.
 $(\frac{1}{4}$ hour = 15 minutes).

106. $75 \times \frac{4}{5} = 60$ pounds

107. $12 \div 2 = 6$

108. $(5 + 3)(2\frac{1}{2}) = 16 + 4$
 $= 20$ sq ft
 or
 $8 \times 2.5 = 20$ sq ft

109. 6 N
 3 D
 4 N 1 D
 2 N 2 D
 1 N 1 Q

110. $4 \times 16 = 64$

111. $\frac{144}{32} = \frac{9}{2} = 4\frac{1}{2}$

112. 32

113. 96

114. $1\frac{1}{2}$

115. $3 \times 4 + 2 = 14$ quarts
 (bottles)

116. $30 \times 4 \div 2.5 = 48$

117. 2

118. $1\frac{1}{4}$

119. 11:35 pm

Answer Key

1. 3
2. 10
3. 11
4. -9
5. 1
6. 20
7. -5
8. -4
9. 4
10. -10
11. 2
12. 2
13. -8
14. 31
15. -22
16. -27
17. -1
18. 3
19. 3
20. -31
21. $100 + 15 = 115$
22. $5 \times 5 + 40 = 65$
23. $-3 - 7 = -10$
24. $-30 - 17 = -47$
25. $-3 - 7 = -10$
26. $-13 - 17 = -30$
27. C

28. A
29. D
30. B
31. 150%
32. 260%
33. 175%
34. 380%
35. 305%
36. $1\frac{4}{5}$
37. $3\frac{3}{5}$
38. $1\frac{11}{20}$
39. $2\frac{13}{20}$
40. $2\frac{9}{25}$
41. $\frac{1}{18}$
42. $\frac{1}{2}$
43. $\frac{11}{18}$
44. $\frac{7}{48}$
45. $\frac{13}{36}$
46. $\frac{6}{42} = \frac{1}{7}$
47. $\frac{17}{72}$
48. $\frac{1}{24}$
49. $\frac{8}{15}$

50. $\frac{4}{35}$
51. -5
52. -3
53. -4
54. -2
55. -2
56. -1
57. 1
58. -3
59. 1
60. 9
61. 16
62. 40
63. 45
64. 54
65. -12
66. -7
67. 6
68. -8
69. 96
70. -4
71. D
 $1 + 2 + 3 = 6$
 $\frac{1+3}{6} = \frac{2}{3}$
72. $5 \times 6 = 30$ tickets
73. D
74. 1

75. 4620
76. -0.037
77. 0.14
78. 30
79. 29 & 30
80. A
81. B
82. C
83. See the answer below.

67	1	43
13	37	61
31	73	7

84. A
85. D
86. D
87. C
88. $7.5 \times 36 = 15 \times 18 = 30 \times 9 = \270
89. $40 \times 8 + 5 \times 12 = 320 + 60 = \380
90. $\frac{580 - 40 \times 10}{15} + 40 = 52$
hr

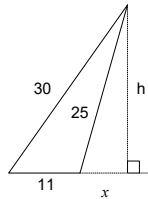
Answer Key

- | | | | |
|---|---|---|--------------------------------|
| 1. 7 | 6. 22 | 11. 30 | 16. B |
| 2. 6 | 7. \$34 | 12. 10 | 17. A |
| 3. 15 | 8. 6 | 13. 17 | 18. A |
| 4. 5 | 9. 60 | 14. B | 19. 3 |
| 5. 7.5 | 10. 44 | 15. C | 20. 5 |
| 21. D | 26. 1800 | 31. C | 36. A |
| 22. C | 27. 14.1 | 32. C | 37. D |
| 23. B | 28. C | 33. 5/13 | 38. D |
| 24. A | 29. B | 34. 6.21 | 39. B |
| 25. A | 30. A | 35. C | 40. 31 |
| 41. 2.7×10^{-5} | 46. 7.2×10^2 | 51. 7.5×10^{-6} | 56. 1.02×10^{13} |
| 42. 3.24×10^2 | 47. 4.5×10^{-14} | 52. 9×10^{-3} | 57. 1.25×10^{15} |
| 43. 2.52×10^{-8} | 48. 4.92×10^{15} | 53. 8×10^{-2} | 58. 1.4×10^{-14} |
| 44. 3.6×10^{-12} | 49. 4.32×10^6 | 54. 1×10^{-2} | 59. 1.2×10^1 |
| 45. 9.6×10^{-8} | 50. 5.4×10^{12} | 55. 1.1×10^{-9} | 60. 1.5×10^5 |
| 61. $x = 2$ | 66. $t = 10$ | 71. 2 & -6 | 76. 50° |
| 62. -38 | 67. $x = -2$ | 72. 6 & -2 | 77. 60° . |
| 63. $x = -2$ | 68. $x = -7$ | 73. 9 & 3 | 78. 120° |
| 64. $x = 2$ | 69. 4.5 | 74. 5 & -3 | 79. 18° |
| 65. $x = 1$ | 70. 2 | 75. 4.5 & -3.5 | 80. Linear pair |
| 81. complementary | 86. $\angle AOC = 180^\circ - 40^\circ = 140^\circ$ | 88. $x = 180^\circ - 2(30^\circ) = 120^\circ$ | 94. $\frac{1}{2}x^2 + 2x - 16$ |
| 82. supplementary | $\angle 2 = \frac{1}{2}\angle AOC = \frac{1}{2}(140^\circ) = 70^\circ$ | 89. $\angle CBA = 80^\circ$, therefore, $x = \frac{1}{2}(80) = 40$. | 95. $-0.5x^2 + 3x - 4$ |
| 83. $\angle 2$ and $\angle 4$ are supplementary to $\angle 1$ | 87. $\angle AOB + \angle BOC = 180^\circ$ (linear pair) | 90. Yes, since $x = y = 140^\circ$. | 96. $-6x^2 + 12x + 48$ |
| 84. 45° | $\angle 1 = \frac{1}{2}\angle AOB$ (bisector) | 91. $x^2 + 2x - 24$ | 97. $36x^2 - 96x + 15$ |
| 85. Yes. Straight angle has 180° and a right angle is 90° . | $\angle 2 = \frac{1}{2}\angle BOC$ (bisector) | 92. $x^2 - 5x + 4$ | 98. $15x^2 + 85x + 120$ |
| | $\angle 1 + \angle 2 = \frac{1}{2}(\angle AOB + \angle BOC) = 90^\circ$ | 93. $x^2 + 3x - 28$ | 99. $4.2x^2 - 9.1x + 4.2$ |
| | | | 100. $-7.5x^2 - 14x - 2.5$ |

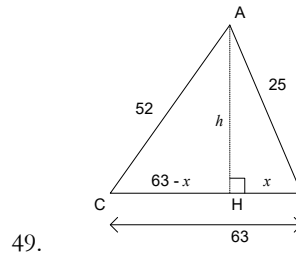
Answer Key

1. A
2. B
3. A
4. C
5. A
6. $3/10$
7. C
 $32\% - 38\%$
 $320 - 380$ (sample)
 $16,000 - 19,000$
(actual)
8. 5
9. B
10. A
11. B
12. C
 $x(x - 15) = 76 =$
 19×4
So, the perimeter is
 $2(19 + 4) = 46$
13. C
14. B
15. 40
16. D
17. C
18. A
19. $4/5$
20. $25/4$
21. 14
22. $81/4$
23. B
24. 55
25. C
26. B
27. D
28. A
29. 240
30. B
31. 27
32. C
33. C

34. D
35. 47
36. D
37. A
38. C
39. D
40. D
41. B
42. D
43. A
44. D
45. Try to establish the following equation:
 $30^2 - (11+x)^2 = 25^2 - x^2 (=h^2)$
 $900 - 121 - 22x - x^2 = 625 - x^2$
 $22x = 154 \Rightarrow x = 7$
 $h = \sqrt{25^2 - 7^2} = 24$



46. $\frac{1}{2}(11 \times 24) = 132$
47. 12
Let $x = CH$, then $BH = 21 - x$
We have
 $20^2 - (21 - x)^2 = 13^2 - x^2 (=h^2)$
 $42x = 210$
 $x = 5$
 $h = \sqrt{13^2 - 5^2} = 12$
48. $\frac{1}{2}(h \times BC) = \frac{1}{2}(12)(21) = 126$



49. Try to establish the following equation:
 $52^2 - (63-x)^2 = 25^2 - x^2 (=h^2)$
 $2704 - 3969 + 126x - x^2 = 625 - x^2$
 $126x = 1890$
 $x = 15$
 $h = \sqrt{25^2 - 15^2} = 20$
50. $\frac{1}{2}(63 \times 20) = 630$
51. $BC = \sqrt{12^2 + 5^2} = 13$.
 $12^2 = 13 \cdot x \Rightarrow x = 12^2 \div 13 = 144/13$.
 $5^2 = 13 \cdot y \Rightarrow y = 25/13$.
 $13 \cdot h = 12 \cdot 5 \Rightarrow h = 60/13$.
52. $h^2 = 12 \cdot 3 \Rightarrow h = 6$
 $c^2 = 12 \times 15 \Rightarrow c = \sqrt{180} = 6\sqrt{5}$
 $b^2 = 3 \times 15 \Rightarrow b = \sqrt{45} = 3\sqrt{5}$.
53. $b^2 = AH^2 + CH^2 \Rightarrow b = 5\sqrt{5}$
 $b^2 = 5 \cdot BC = 5 \cdot (5+x) \Rightarrow 125 = 25 + 5x \Rightarrow x = 20$.
 $c^2 = BH \times BC = 20 \times 25 = 500 \Rightarrow c = 10\sqrt{5}$.

54. $7^2 = 25 \cdot y \Rightarrow y = 49/25$
 $x = 25 - y = 23.04$
 $c^2 = 25x \Rightarrow c = 24$ or
 $c^2 = \sqrt{25^2 - 7^2} = 24$
 $25 \cdot h = 24 \cdot 7 \Rightarrow h = 6.72$
55. Solve x or y first.
Since $y = 25 - x$, by Theorem B.4, $xy = h^2 \Rightarrow x(25-x) = 144 \Rightarrow x^2 - 25x + 144 = 0 \Rightarrow (x-9)(x-16) = 0 \Rightarrow x = 9$ or 16 . We may choose $x = 16$ according to the figure. Henceforth, $y = 9$
 $c^2 = x^2 + 12^2 = 400 \Rightarrow c = 20$
 $b^2 = y^2 + 12^2 = 225 \Rightarrow b = 15$
56. $h^2 = xy = 4 \times 1 = 4 \Rightarrow h = 2$
 $c^2 = BH \times BC = 20 \Rightarrow c = 2\sqrt{5}$
 $b^2 = CH \times BC = 5 \Rightarrow b = \sqrt{5}$
57. In the right triangle, since h is the length of one leg, and the length of the other leg is $(22-8) \div 2 = 7$, $h^2 = 25^2 - 7^2 = 576 \Rightarrow h = 24$. The area of the trapezoid is $\frac{1}{2}(8+22) \times 24 = 360$

