

Answer Key

1. 10
2. 8 & 3 (R)
3. 2
4. $9^3 = (3^2)^3 = (3^3)^2 = 27^2$
 $\square = 2$
5. 23
6. $\frac{5}{24} = 5/24$
7. A = 39
8. 31
9. $8 \times 4 = 32$
10. $120 \div 40 = 3$
1 min 30 sec = 1.5 min
 $3 \times 1.5 = 4.5 \text{ min}$
11. $300 \div 40 = \frac{15}{2}$
 $\frac{15}{2} \times 1\frac{1}{2} = \frac{15}{2} \times \frac{3}{2} = \frac{45}{4} = 11\frac{1}{4} = 11 \text{ min \& 15 sec}$
12. $38 \div 2 = 19$ (half-perimeter)
 $19 - 10 = 9$
 $10 \times 9 = 90 \text{ in}^2$
13. D = 5
C = 10
B = $10 + 2 = 12$
A = $12 + 6 = 18$
14. A
15. 125%
16. $1 = 1$
 $3 = 1+2$
 $6 = 1+2+3$
 $12 = 1+2+3+6$
 $1 + 3 + 6 + 12 = 22$
17. $8 \times 6 = 48$
 $\frac{1}{2} \times 48 = 24 \text{ in}^2$
18. Method I)
 $12.5 + 2 \times 7.25$
 $= 12.5 + 14.5$
 $= 27$

Method II)
 $12\frac{1}{2} + 2 \times 7\frac{1}{4}$
 $= 12\frac{1}{2} + 14\frac{1}{2}$
 $= 27$
19. 80
20. $50 + 75 = 125$
 $50 + 125 = 175$
 $175 \times 2 = 350$
21. $\frac{1}{10} = 1/10$
22. -9
23. 1.1
24. .064
25. .002
26. 10,000
27. 250%
28. $30\% \times 24 = 7.2 = 7 \text{ hr \& 12 min}$
29. 35%
30. 16
31. 4.5
32. $5 \times \frac{17}{60} - \frac{1}{6} = \frac{15}{12} = 1\frac{1}{4} = 1 \text{ 1/4}$
33. $156 = 26 \times 6$
 $130 = 26 \times 5$
LCM = $26 \times 6 \times 5 = 780$
34. $6\frac{19}{48} = 6 \text{ 19/48}$
35. $40 \div 8 = 5$
 $3 \times 5 \times 5 = 75 \text{ in}^2$
36. $9 \times 3 = 27$ (sum)
 $27 - 5 - 11 = 11$ (Charles)
37. $11^2\pi - 10^2\pi = 21\pi = 21 \text{ pi}$
38. 60°
39. $300 \div 20 = 15$
40. $18 \div 60 = 0.3$ (hr)
 $80 \times 0.3 = 24 \text{ mi}$
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. $\frac{5}{6}(400-100)\pi = 250\pi = 250 \text{ pi}$

MAP 280 (T1) Issue 3

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. $\frac{2.1}{7} = 0.3 \times 4 = 1.2$
62. $(-120) \times \frac{1}{3} \times \frac{1}{4} \times \frac{1}{5} = 2$
63. D
 $2\sqrt{6}x$
64. $x = -1$ or 5
65. 11.2
66. height = $2 \times 25 \div 5 = 10$
 $25 \times 10 = 250$ sq cm.
67. $15 \times 2 + 18 = 48$ in
-
68. $(8-2) \times 180^\circ = 1080^\circ$
 $\frac{1}{8}(1080^\circ) = 135^\circ$
69. $90 + 40 = 130$
 $x = \frac{1}{2}(130) = 65$
70. There is only one ①-sticker needed from page 0 to page 9. For double-digit pages like 1X, $0 \leq X \leq 9$, we need 10 such stickers. For double-digit pages like Y1, $1 \leq Y \leq 9$, we need 9 ①-stickers. We need $1 + 10 + 9 = 20$ ①-stickers
71. $500 \div 2 = 250$
 $t + m = 250$
 $t - m = 50$
 $t = 150$
 $m = 100$
 $100 \times 2 = 200$ km
72. D
 $\frac{6}{20} = \frac{18}{60}$ (Ann)
 $\frac{4}{15} = \frac{16}{60}$ (Ben)
 $\frac{5}{12} = \frac{25}{60}$ (Carl)
 $\frac{7}{30} = \frac{14}{60}$ (Dana)
73. $30 \times 0.2 = 6$
 $30 \times \frac{1}{6} = 5$
 $30 - 5 - 6 = 19$ (cards)
74. 17
75. $\frac{a}{3} = \frac{b}{4} = \frac{c}{5} = \frac{b+c}{4+5} = \frac{b+c}{9} = \frac{2.7}{9} = 0.3$
 $a = 3 \times 0.3 = 0.9$
76. 7
77. $\frac{6-r}{5-(-1)} = \frac{2}{3}$
 $6 - r = 4$
 $r = 2$
78. $\frac{23-5}{a-1} = \frac{18}{a-1} = 3$
 $\frac{6}{a-1} = 1$
 $a = 7$
79. $y = 3x - 13$
 $y + 4 = 3(x-3)$
 $y = 3x - 13$
80. $24 \div 3 = 8$
 $2(8 + 4) = 24$