

Answer Key

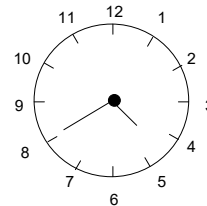
1. 3
2. 10
3. 9
4. 15
5. 6
6. 3
7. 4
8. 24
9. 4
10. 12
11. 7
12. 6
13. 8
14. 14
15. 16
16. 4
17. 24
18. 6
19. 10
20. 8
21. 2
22. 7
23. 3
24. 20
25. 42
26. 7
27. 12
28. 2
29. 32
30. 7
31. $12 - (4 + 1) = 7$ more miles
32. $17 + 3 = 20$
 $20 \times 2 = 40$
 $40 - 3 = 37$ yrs old
33. $40 \div 20 = 2$
 $2 \times 2 = 4$ gallons
34. $200 \times 2 = \$400$
35. $600 \times 3 = \$1800$
36. $5 \times 2 = 10$ sq. inches
37. 8 vertices
38. $20 \times 20 = 400$ (square area)
 $10 \times 30 = 300$ (rectangle area)
 Ans = A
39. $276 \div 3 = 92$
40. $21 \times 6 = 126$ min
41. $81 - 53 = 28$
42. $121 - 46 = 75$
43. {312, 200, 217, 156 }
44. $450 + 530 = 980$
 $980 \div 20 = \underline{49}$ teachers
45. $13 \times 2 = 26$
 $13 + 26 = 39$ points
46. $3 \times 12 = 36$
 $\frac{1}{3} \times 12 = 4$
 $36 + 4 = 40$ inches
47. $36 \div 3 = 12$ (Mary)
 $12 \times 2 = 24$ (Susan)
48. $51 \times 2 = 102$ words
 $102 \times 5 = 510$ words (Michael)
49. $2 + 8 = 10$
 $4 \times 10 + 2 = \$42.00$
50. $2:35 - 0:15 = 2:20$ P.M.
51. $15 \times 3 = 45$
 $15 + 45 = \underline{60}$
52. $4 \times 31 = 124$ meals
53. $2 \times 1 + 1 = 3$
 $2 \times 3 + 1 = 7$
 $2 \times 7 + 1 = 15$
 $2 \times 15 + 1 = \underline{31}$
 $2 \times 31 + 1 = \underline{63}$
 Ans = 31 & 63
54. $1 \times 5 = 5$
 $5 \times 5 = 25$
 $25 \times 5 = 125$
 $125 \times 5 = 625$
55. $35 - 7.5 - 21 - 2 = 4.5$
 $4.5 \div 3 = \$1.50$
56. $390 - 130 = 260$
 $260 \div 130 = 2$
 $2 \times 4 = 8$ weeks
57. $10 - 3 = 7$ (now)
 $7 - 3 = 4$ (3 years ago)
58. $2 \times 18 = 36$
 $36 - 4 = 32$
59. $2001 - 1992 + 20 = 29$

MAP 230 (T1) Issue 3

60. 3 sisters
61. $15 \div 5 = 3$
 $3 \times 3 = \underline{\$9.00}$
62. $21 - 4 = 17$
 $2 \times 17 + 2 = \boxed{36}$
63. 60
64. 2000
65. $53 - 5 = 48$ (Cheryl)
 $48 \div 2 = 24$ (Cindy)
66. $8 \times 4 = 32$
67. $8:15 - 7:20 = 55 \text{ min}$
68. $400 \times 0.7 = 280$
69. $6:45 + 1:45 = 8:30 \text{ P.M.}$
70. $57 - 25 = 32$
 $32 \div 4 = 8 \text{ friends}$

Answer Key

1. 1400
2. 9,000
3. 1,000
4. 7.2
5. 0.14
6. 0.018
7. $\frac{1}{5} = 1/5$
8. $240 \div 6 = 40$
9. 0.07
10. 0.06
11. 3
12. 3087
13. 24 & 3 (remainder)
14. 5
15. 10
16. 25%
17. 75%
18. $\frac{5}{12}$
19. $\frac{1}{6}$
20. 556
21. $170 - 85 = 85$
22. $7 \times 7 = 49$
23. (a) $8 \times 2 = 16$
(b) $9 \times 2 = 18$
(c) $2 \times 3 = 6$
24. (a) $60 \times (3/4) = 45$
(b) $60 \times (3/4) = 45$
25. $10.00 - 3 \times 2.00 = 4$
26. $(43 + 27) / 2 = 35$
27. D
28. (a) $42 / 6 = 7$
(b) $36 / 9 = 4$
29. (a) 52 (b) 54 (c) J
30. (a) $35 \times (4/7) = 20$
(b) $35 \times (1 - 4/7) = 15$
31. $90 - 59 = 31$
32. $2 \times 10 / 5 = 4$
33. (a) $7 + 2 + 2 = 11$
(b) $7 \times 2 \times 2 = 28$
34. $24 \times \frac{3}{4} = 18$
35. $60 \times 4 = 240$
36. $3 \times 35 = 105$
37. (a) $400 / (9 + 1) \times 9 = 360$
(b) $400 / (9 + 1) = 40$
38. (a) $45 \times 4 / (4 + 6) = 18$
(b) $45 \times 6 / (4 + 6) = 27$
39. $(2 \times 50 - 74) = 26$
40. $5 \times (12/3) = 20$
41. 5
42. 6 & 1 (remainder)
43. 4.39
44. $\frac{7}{10}$
45. 0.4
46. $2100 \div 15 = \frac{2100}{15} = \frac{700}{5} = 140 = \boxed{140}$
47. 54
48. $3:30 + 1:10 = 4:40$



49. $4 - 3 = 1$
50. $1246 - 879 = 367$
51. $1200 \div 3 = 400$
 $400 - 360 = \boxed{40 \text{ (mi)}}$
52. $12.50 \times 2 = 25$ (2nd day)
 $25 \times 2 = 50$ (3rd day)
 $12.5 + 25 + 50 = \boxed{\$87.50}$
53. $4702 - 578 = 4124$
54. $4 \times 4.5 = 18$
 $18 \div 6 = 3$
55. $7 + 6 = 13$
56. $165 \div 5 = 33 \text{ mi}$
57. N
58. $6 - 3 + 10 - 2 + 4 = 15$
59. $4 \times 7 = 28$
60. $47 - 25 = 22$
61. 167
62. $16 \frac{4}{7}$
63. $\frac{1}{16}$
64. 0.25

MAP 240 (T1) Issue 3

65. $12 \times 3 + 23 \times 2 = 82$

66. 4

67. 4

68. 9

69. $(9 - 8) + (7 - 6) + (5 - 4) + (3 - 2) + 1 = 5$

70. 51

71. 9:40 A.M.

72. $8 + 3 = 11$

$5 + 2 = 7$ (width)

$11 \times 7 = 77 \text{ ft}^2$

73. $\frac{1}{2} \times 50 = 25$

$25 + 50 = 75$

74. What is the width?

$8 - 2 - 2 = 4$

What is the length?

$10 + 4 - 6 = 8$

Thus, the area is

$8 \times 4 = 32 \text{ in}^2$

75. 12,059

76. $12 \div 3 = 4$

$4 \times 5 = \$20.00$

77. Kim: $163 + 347 = 510$

Bill: $300 \times 2 = 600$

Difference: $600 - 510 = 90$

78. $21 \div 3 = 7$

$21 - 7 = 14$

79. $3 \times 12 + 14 = 36 + 14 = 50$ (min)

80. $30 - 6 = 24$

$24 = 16 + 8$

$16 + 3 = 19 \text{ yrs old}$

81. C

82. D

83. B

84. C

85. C

Answer Key

1. 556
2. 3
3. .0006
4. .016
5. .01
6. 0.252
7. 8.3
8. 24 & 3 (remainder)
9. 9
10. $\frac{1}{3}$
11. 15
12. 56
13. .09
14. 100
15. 15
16. 14,000
17. 88.9
18. 462
19. 140%
20. 20
21. $\frac{3}{2} = 3\frac{1}{2}$
22. $\frac{2}{5} = 2\frac{2}{5}$
23. $\frac{1}{4} = 1\frac{1}{4}$
24. $A = 12$
25. $\frac{3}{8} \times 24 = 9$
26. 0.06
27. 18
28. 500
29. $120 \div 2 = 60$
 $60 \div 3 = 20$ (width)
 $20 \times 2 = 40$ (length)
 $20 \div 2 = 10$ (radius)
 $10^2 \pi = 314$
 $2 \times 314 = 628$ (two circles)
 $20 \times 40 = 800$
 $800 - 628 = 172$
30. $10 - 6 = 4$ (height)
 $4 \times 6 = 24 \text{ in}^2$
31. $60 \div 2 = 30$
 $30 - 20 = 10$
 $20 \times 10 = 200 \text{ in}^2$
32. 12×25000
 $= 3 \times 4 \times 25000$
 $= 3 \times 100000$
 $= 300,000$
33. B
34. 3.25
35. $120 \div 12 = 10$
 $2(12 + 10) = 44 \text{ ft}$
36. $40 \times 12.25 = 490$
37. $195 \div 32\frac{1}{2}$
 $= 195 \div 32.5$
 $= \$60 \text{ per hour}$
38. $360 \div 60 = 6$
39. $20 \times 3 \times 2 = \$120$
40. 1, 2, 3, 4, 6, and 12 are the factors of 12. Their sum is
 $1 + 2 + 3 + 4 + 6 + 12$
 $= 28$
41. $0.4 = 40\%$
42. 4
43. 9
44. $\frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \times 144 = 360$
45. $4\frac{13}{24} = 4\frac{13}{24}$
46. $\frac{5}{7}$
47. $A = 56$
48. $882 \div 9 = 98$
49. 10
50. $750 \div 50 = 1.5 \text{ gal per sec}$
51. $600 \div 1.5 = 400 \text{ sec} = 6 \text{ min } 40 \text{ sec}$
52. Brian:
 $\frac{1}{10} \times 300 = 30$
 $50 + 30 = 80$
53. C
Alex: $\frac{1}{6} \times 300 = 50$
Brian: 80
Calvin:
 $300 - 50 - 80 = 170$
 $170 \div 2 = 85$
 $85 + 10 = 95$
54. $54 - 15 - 3 \times 9 = 12$
 $\frac{1}{2} \times 12 \times 9 = 54$
 $54 + 9^2 = 135$
55. $63 \text{ lb } 8 \text{ oz} - 36 \text{ lb } 9 \text{ oz}$
 $= 26 \text{ lb } \& 15 \text{ oz}$

MAP 250 (T1) Issue 3

56. $10 \times 10 = 100$ (square area)
 $\frac{1}{2}(20 \times 10) = 100$
 $x = 10 \text{ in}$

57. $A = 1$
 $B = 5$
 $C = 3$
 $D = 7$
 $1535 \times 5 = 7675$
 $C + D = 3 + 7 = 10$

58. $3.25 \times 200 = 650$
 $15.75 \times 6 = 94.5$
 $650 + 94.50 = \$744.50$

59. $343 \div 7 = \$49.00$

60. $35 \times 4 = 140$
 $140 - 50 = 90$
 $90 \div 3 = 30 \text{ pounds}$

61. 10 matches needed
 RY, RG, RB, RW,
 YG, YB, YW,
 GB, GW, and
 BW.

62. D
 $5 \times 0.5 = 2.5$
 $50 \div 2.5 = 20$

63. $42.15 \div 3 = 14.05$
 $14.05 \times 5 = \$70.25$

64. $50 \div (2 + 3) = 10$
 $10 \times 2 \times 40 = 800 \text{ times}$

65. $1\frac{1}{4} : 2\frac{1}{2} = 1:2$
 $3 \times 2 = 6 \text{ cups}$

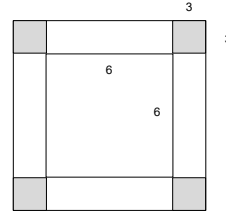
66. Julio = 15
 Erin = 30
 Kesha = 37
 Total = 82

67. (a) $47 - 3 - 14 - 1 - 14 = 15$
 (b) $97 - 47 = 50 \text{ B.C.}$

68. $6849 - 6750 = 99$

69. $10 \times 10 \times 10 \times 10 = 10,000$

70. $144 = 12^2$
 $144 - 108 = 36$
 $36 \div 4 = 9$
 $9 = 3^2$
 $12 - 2 \times 3 = 6$
 $6 \times 6 \times 3 = 108 \text{ in}^3$



71. $144 \div 24 = 6 \text{ gal}$

72. $1 - \frac{1}{2} = \frac{1}{2}$ (one half left)
 $\frac{1}{2} - \frac{1}{3} = \frac{1}{6}$
 30 pages account for $\frac{1}{6}$ of the book.
 $30 \div \frac{1}{6} = 180 \text{ pages}$

73. 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
 $8.45 - 7.20 = \$1.25$

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

75. $11 \frac{9}{10} \div 2 \frac{1}{3}$
 $= \frac{119}{10} \div \frac{7}{3}$
 $= \frac{119}{10} \times \frac{3}{7}$
 $= 5.1 \text{ hour}$
 $= 5 \text{ hours \& 6 minutes}$

76. 1 square yard = $(3 \text{ feet})^2 = 9 \text{ ft}^2$
 36 square yard
 $= 36 \times 9 \text{ ft}^2$
 $= 324 \text{ ft}^2$

77. $2 \text{ hr } 36 \text{ min} = 2.6 \text{ hr}$
 $\frac{130}{2.6} = 50 \text{ mph}$

78. $\frac{3(\text{pure})}{7(\text{alcohol})} = \frac{\Delta(\text{pure})}{56(\text{alcohol})}$
 $\Delta = 24$

79. $21 - 2 = 19$

80. $10 \div \frac{1}{3} = 30$

Answer Key

1. $20 \times 3 = 60$ (wheels if all tricycles)
 $68 - 60 = 8$ (falling short from reality)
 $8 \div (4 - 3) = 8$ (sedans)
 $20 - 8 = 12$ (tricycles)
2. $\frac{80-64}{80} = 0.2 = 20\%$
3. $5 \times \square = 3.5$
 $\square = 3.5 \div 5 = \$0.70$
4. There are four places _____ to fill up. So, there are $26 \times 26 \times 10 \times 10 = 67600$ combinations.
5. $54 \div 3 = \$18.00$ (each hour Friday, better)
 $60 \div 4 = \$15.00$ (each hour Saturday)
6. $-15 + 8 - 2 = -9$
7. $7.5 \times 36 = \$270$
8. $40 \times 8 + 5 \times 12$
 $= 320 + 60$
 $= \$380$
9. $550 - 40 \times 10 = 150$
 $150 \div 15 = 10$
 $10 + 40 = 50$
10. C
B: 0.17
J: $55\% = 0.55$
N: 0.57
U: $\frac{1}{5} = 0.2$
Great Britain, United States, Japan, The Netherlands
11. Outbound: $210/60 = 3.5$ hours
Inbound: $210/70 = 3$ hours
 $3.5 + 3 = 6.5$ hours
12. $150 \div 60 \times 10 = 150 \div 5 = 25$
13. $\frac{\text{\#correct questions}}{\text{\#total questions}} = \frac{12}{\text{\#total questions}} = 80\%$
total = 15
14. 1 min = 60 sec = 3(20)
 $30 \times 3 = 90$ words (per min)
 $90 \times 10 = 900$ words
15. $\frac{12.75}{3} \times 5 = \21.25
16. $5 \times 4 \times 3 \times 2 \times 1 = 120$ ways
17. $4.25 \times 4 = 17$ (books)
 $17 + 4.25 = 21.25$
 $21.25 + 7.35 = \$28.60$
18. $\frac{1}{2}(56^\circ) = 28^\circ$
19. B
 $\frac{5550}{5551} = 1 - \frac{1}{5551}$
 $\frac{5551}{9999} = 1 - \frac{1}{9999}$
Since $\frac{1}{5551} > \frac{1}{9999}$,
 $A < B$
20. price : discount
 $= 80\% : 20\%$
 $= 4 : 1$
 $= \$124 : \31
Ans = \$31 (discount)
21. -2
The larger one is 9.
22. A
 $4.68/32 \approx \$0.14$ (32-ounce cheaper)
 $5.39/30 \approx \$0.17$
23. $\frac{1}{2} \times 0.4 = 0.2$
 $0.2 \times 1.5 = 0.3$
 $0.3 \times (1 - 0.5) = 0.3 \times 0.5 = 0.15$
24. $420 \div 2 = 210$
 $210 \times 3 = 630$ cups
25. $12 \div 3 = 4$
 $4 \times (3 + 2) = 20$
26. $1.5 \text{ million} / 30 \text{ million} = 1.5/30$ (million is canceled) $= 0.05 = 5\%$
27. $7\pi = 21.98$
28. $13 - 10 = 3$
 $1 - \frac{2}{3} = \frac{1}{3}$ (left)
 $3 \div \frac{1}{3} = 3 \times 3 = 9$ (weight of the water in the full capacity)
 $13 - 9 = 4$ (weight of the container)
29. Method I)

#Right	Raw Score	Deduction	Actual Score
20	100	0	100
19	95	2	93
18	90	4	86
17	85	6	79
16	80	8	72
15	75	10	65

Method II)
 $100 - 72 = 28$
 $28 \div 7 = 4$
 $20 - 4 = 16$ (questions right)

MAP 260 (T1) Issue 3

30. $\frac{3}{8}, \frac{4}{8},$ and $\frac{5}{8}$
Ans = 3&4&5 (list the numerators only)

31. $3 + 39 = 42$
 $42 \times 9 = 378$

32. $\frac{98-50}{50} = 0.96 = 96\%$

33. $\frac{1}{12} \times \frac{1}{45} = \frac{1}{540}$
Ans = 540 bees

34. A
How much play money did each one have before the 3rd game?

	at 3 rd game	Reverse	at 2 nd game	Reverse	at 1 st game	Reverse	Start
Alex	24	-12	12	-6	6	+33	39
Ben	24	-12	12	+30	42	-21	21
Carl	24	+24	48	-24	24	-12	12

So, Alex lost the most (-\$15).

Brian (+\$3)

Carl (+\$12)

35. $5 \times 4 = 20$

36. $15 \div 90 = \frac{1}{6}$, 1 out of 6 is defective
 $20 \times \frac{1}{6} = 20$ defectives

37. A
If two of the statements are false and one statement is true, then Kim and Jim lied, Tim told the truth.
 $\Rightarrow$ Kim took the cookie.

38. 2

39. $1^2 = 1, 2^2 = 4, \dots, 7^2 = 49, 14^2 = 196$
Ans = 14 (perfect squares)

40. $(\frac{2}{3} + \frac{1}{2}) \div 2 = \frac{7}{12} = 7/12$

41. 0.0004

42. 36

43. 110

44. .098

45. 0.089

46. $\frac{14}{3} = 14/3$

47. $2^9 = 8^3$

48. -4

49. $x = 9$

50. $\frac{7}{10} = 7/10$

$$\begin{array}{r} 30\frac{1}{15} \\ + 10\frac{5}{15} \\ + 20\frac{9}{15} \\ \hline 60\frac{15}{15} = 61 \end{array}$$

51. $\frac{60\frac{15}{15}}{15} = 61$

52. x^{12}
 $\square = 12$

53. $54 \times 2 = 108$
 $54 \times \frac{1}{9} = 6$
 $108 + 6 = 114$

54. $6 \times 5 \div 2 = 15$ chords

55. $60 \times 5\% = 60 \times 0.05 = 3$
 $60 + 3 = \$63.00$

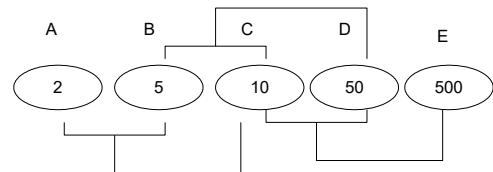
56. $\frac{1}{2} \times 6 \times 8 = 24$

57. $\Delta ABC = 30 = \frac{1}{2} \times BH \times AC = \frac{1}{2} \times BH \times 13$
 $BH = \frac{60}{13} = 60/13$

58. $63.75 \div 5 = \$12.75$

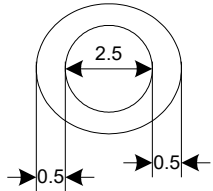
59. 19

60. 567 (cards)
See the following figure.



$$2 + 5 + 10 + 50 + 500 = 567$$

Answer Key

1. $\frac{4}{9} = 4/9$
2. 1
3. $\frac{4}{5} = 4/5$
4. .001
5. 0.027
6. $(2-1) + (4-3) + (6-5) + (8-7) + (10-9) = 5$
7. $2.1^2 = 4.41$
8. $314 \times 5 = 1570$
 3.14×0.05
four decimal places altogether
 $= 0.1570 = 0.157$
9. $x = 4$
10. $\frac{1}{7} + \frac{1}{3} \div \frac{49}{30} = \frac{1}{7} + \frac{10}{49} = \frac{17}{49} = 17/49$
11. $2^{10 \div 2^3} = 2^7$
 $\square = 7$
12. 0.000125
13. -112
14. $2\frac{5}{12} = 2\ 5/12$
15. $2.5 + 2 \times 0.5 = 3.5$ in

16. $90 - 72 = 18$
 $18 \div 90 = .2 = 20\%$
17. 60°
18. $64 = 8 \times 8$
 $8 \times 4 = 32$ in
19. $3 \times 4.5 = 13.5$ (cm²)
20. $\frac{1}{2}(12 \times 5) = 30$
21. $\frac{1}{10} = 1/10$
22. -9
23. 1.1
24. .064
25. .002
26. 10,000
27. 250%
28. $30\% \times 24 = 7.2 = 7$ hr & 12 min
29. 35%
30. 16
31. 4.5
32. $5 \times \frac{17}{60} - \frac{1}{6} = \frac{15}{12} = 1\frac{1}{4} = 1\ 1/4$
33. $156 = 26 \times 6$
 $130 = 26 \times 5$
LCM = $26 \times 6 \times 5 = 780$
34. $6\frac{19}{48} = 6\ 19/48$
35. $40 \div 8 = 5$
 $3 \times 5 \times 5 = 75$ in²
36. $9 \times 3 = 27$ (sum)
 $27 - 5 - 11 = 11$ (Charles)
37. $11^2\pi - 10^2\pi = 21\pi = 21$ pi
38. 60°
39. $300 \div 20 = 15$
40. $18 \div 60 = 0.3$ (hr)
 $80 \times 0.3 = 24$ mi
41. 5
42. .00009
43. $1\frac{2}{3} \div 3\frac{3}{4} = \frac{5}{3} \times \frac{4}{15} = \frac{4}{9} = 4/9$
44. 3
45. $-4 = t + 7$
 $t = -3$
46. $x = -5$
47. Multiplying 6 to both sides, we get
 $30 - 2(2x-3) = 3(3x-1)$
 $30 - 4x + 6 = 9x - 3$
 $36 - 4x = 9x - 3$
 $13x = 39$
 $x = 3$
48. $17 \div 25 = 0.68 = 68\%$
49. $200 - 80 = 120$
 $120 \div 30 = 4$
 $4 + 1 = 5$ (min)
50. C
 $80 + (M-1) \times 30 = 30M + 50$
51. 72
52. $3 + 2 = 5$
 $\frac{3}{5} \times 90^\circ = 54^\circ$ (larger)
 $\frac{2}{5} \times 90^\circ = 36^\circ$ (smaller)
 $180 - 54 = 126$
 $180 - 36 = 144$
 $126:144 = 7:8$
53. D
 $4 \times 4 \times 5 + 16\pi = 80 + 16\pi$

MAP 270 (T1) Issue 3

54. B

$$4 \times 4 + 8\pi = 16 + 8\pi$$

55. $52 \div 4 = 13$

$$18 - 13 = 5$$

What is the width of the rectangle?

$$13^2 - 5^2 = 12^2$$

The height is 12 ft.

Thus, the area =

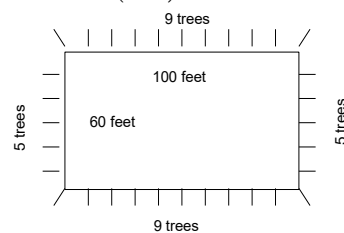
$$13 \times 12 = 156 \text{ ft}^2$$

56. $2 \times 2 \times 2 = 8$

57. $9 + 5 + 9 + 5 = 28$ trees

On the corners, there are 4 trees.

$$28 + 4 = 32 \text{ (total)}$$



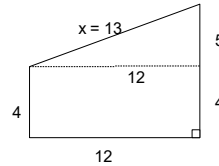
58. $15:72 = 5:24$

59. $10 \times 10 \times 2 = 200 \text{ in}^2$

60. $\text{time} = \frac{\text{distance}}{\text{speed}} = \frac{10}{6} \times 60 = 100 \text{ min}$

Answer Key

1. 0.6
2. 4.9
3. $12 = 2^2 \times 3$
 $54 = 2 \times 3^2$
 $12^3 \times 54^2 = (2^2 \times 3)^3 (2 \times 3^2)^2 = 2^8 \times 3^9$
 $a = 8, b = 9$
 Ans = 8 (for a) & 9 (for b)
4. $\frac{16}{5} \div \frac{4}{3} = \frac{16}{5} \times \frac{3}{4} = \frac{12}{5} = 12/5$
5. $2^{12} \div 2^6 = 4^3$
 Ans = 3
6. 8
7. $\frac{1}{2} = 1/2$
8. $\frac{153}{3} = 51$ (mph)
 $51 \times 5\frac{2}{3} = 289$ mi
9. $S \cap T = \{3, 5, 6, 9, 10, 12, 15, 18, 20\}$
 $\# S \cap T = 9$
10. $64 \times 4 = 256$ in²
11. 3 yard 1 foot = $3\frac{1}{3}$ yard
 $5 \times 3\frac{1}{3} \times 3 = \50
12. $0.65 \times 60 \times 12 = \468
13. $35:65 = 7:13 = 140:260$
 Ans = \$260
14. $600 \div 24 = 25$ ft
15. 84
16. $\frac{3}{5} \times 90^\circ = 54^\circ$
 $180 - 54 = 126^\circ$
17. $12,500 \times \frac{0.32}{100}$
 $= 125 \times 0.32$
 $= 125 \times 8 \times 0.04$
 $= 40$
 $40 \times 3 = \$120$
18. $40 - 16 = 24$
 $40 \times 12 = 480 = 24 \times 20$
 $20 - 12 = 8$ days longer
19. $\frac{1}{2} \times 10 \times 7 = 35$
20. $84 \div (5+7+9) = 4$
 $5 \times 4 = 20$ (Alice)
 $9 \times 4 = 36$ (Catty)
 $7 \times 4 = 28$ (Brenda)
21. $.027^{-\frac{2}{3}} = (0.3)^{3 \times \frac{2}{3}} = 0.3^{-2} = 0.09^{-1} = \frac{1}{0.09} = \frac{100}{9} = 11\frac{1}{9}$
 $= 11 \frac{1}{9}$
22. $\frac{x}{4} + \frac{y}{3} = 1$
 Ans = 4 (for a) & 3 (for b)
23. $x = 90$
24. $1-2+3-4+5 = 1 + (-2+3) + (-4+5) = 3$
 $S = \frac{1}{2} - \frac{1}{4} + \frac{1}{8} - \frac{1}{16} + \frac{1}{32}$
 $2S = 1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \frac{1}{16}$
 $3S = 1 + \frac{1}{32} = \frac{33}{32}$
 $S = \frac{11}{32}$
 Ans = $3\frac{11}{32} = 3 \frac{11}{32}$
25. $2^8 = 4^4$
 $\square = 4$
26. A
 $\frac{3+\sqrt{2}}{3-\sqrt{2}} \times \frac{3+\sqrt{2}}{3+\sqrt{2}} = \frac{(3+\sqrt{2})^2}{7} = \frac{11+6\sqrt{2}}{7}$
27. D
 $\frac{x}{-3} + \frac{y}{5} = 1$
28. 2.16×10^{14}
 Ans = 2.16 (for a) & 14 (for b)
29. $x = 13$
 See the following diagram.



30. $\frac{8(8-3)}{2} = 20$
31. C
32. $\$260 \div 40 = 6.5$
33. C
34. $80\text{¢} + 9 \times 30\text{¢} = 350\text{¢} = \3.50
35. 11 min
36. $\frac{1}{2}(100 - 3 \times 14) = 29$
37. C
38. A
 $60 \div 5 = 12$ (sec)
 $12 \div 6 = 2$ sec
39. C
 $11 = 10 + 1$
 $10 \div 5 = 2$ (min)
 $1 \times 2 = 2$
 $2 \times 60 + 2 = 122$
40. Let x be the side of a square. The rectangle has a length of $4x$, and a width of x . Therefore, the rectangular perimeter is $2(4x+x) = 10x$, which is 80 cm.
 Area of a square: $8 \times 8 = 64$
 Total area = 256 cm^2

MAP 280 (T1) Issue 3

41. C
 $500 \times 1\frac{1}{2}\% + 250 \times 1\%$
 $= 7.5 + 2.5$
 $= 10$
42. \$20
43. D
44. C
45. C
46. B
 $24 : 10 : \square$
 $= 12 : 5 : 13$
 $\square = 26$
47. B
 $8 \text{ lb } 12 \text{ oz} \div 7$
 $= (7 \text{ oz } 28 \text{ oz}) \div 7$
 $= 1 \text{ lb } 4 \text{ oz}$
 $= 1.25 \text{ lb}$
48. C
49. C
50. D
51. $3 \times 4 \times 5 = 60$
52. D
53. A
 $27 \div 1.8 = 15.00$
54. B
55. A
56. 0.75
57. A
58. D
59. D
Draw ten parallelogram.
60. C