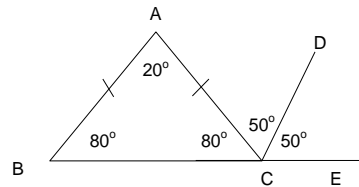MAP 280 (T1) Issue 6

Answer Key

1. 4
2. 1.4
3. -0.4
4. $\frac{-5}{3}$
5. -1.2
6. -4
7. -12
8. 1.5
9. 0.5
10. 4.8
11. $3x^2 + 4x + 1$
12. $x^2 + 13x + 36$
13. $x^2 - 12x + 35$
14. $x^2 + 5x - 24$
15. $2x^2 - 11x + 9$
16. $6x^2 + 2x - 28$
17. $2x^2 - 13x + 18$
18. $6x^2 - 9x - 27$
19. $36x^2 + 30x + 6$
20. $45x^2 + 14x + 1$
21. $3(x + 2)(7x + 2)$
22. $(3x + 2)(7x + 6)$
23. $(3x + 4)(6x - 5)$
24. $(2x + 3)(5x - 2)$
25. $-(2x + 3)(2x - 5)$
26. 7/3
27. -4
28. $x = -3$
29. $x = \frac{16}{3}$
30. $x = -1$
31. $x = -5$
32. $x = 2$
33. $x = 3$
34. $x = -2$
35. $x = -4$
36. $-\frac{1}{8}$
37. $\sqrt{1\frac{2}{3} \times 3\frac{3}{4}} = \sqrt{\frac{5}{3} \times \frac{15}{4}} = \sqrt{\frac{25}{4}} = \frac{5}{2} = 2\ 1/2$
38. -0.28
39. $\frac{2}{5}$

40. 0.75×200 = 150 (from students)
    250 - 150 = 100 (from adults)
    100÷1.25 = 80 (adult tickets) were sold.
41. 4×10×10×5 = 2000
42. A
    32×16 = 512
    512- ¼(256π)
    = 512 - 64π
43. ½ = 1/2
44. C
45. 24 min = 0.4 hr
    0.4×5 = 2
    10×5 = 50 pages
46. $\frac{2}{8}$ = ¼ = 1/4
47. 300 + 15×80 = 1500
48. B
    500 + 10×90 = 1400
    Plan A: 1500 - 1300 = 200
    Plan B: 1400 - 1300 = 100
49. 12 min 15 sec = 12¼ min
    8×12¼ = 98 min = 1 hr & 38 min
50. The total cost of the car:
    9600+6900 = 16500
    16500 - 7500 = 9000
    9000 ÷ 3000 = $3.00
51. $\frac{22}{\frac{11}{4}} = 8$
52. $\frac{1}{64} = 1/64$
53. C
    $6xy - 20x - 20y$
54. $\frac{1}{x^{14}}$
    $\square = 14$
55. 10 + 19 – 27 = 2
56. It can be THH, HTH, or HHT. Each event has a probability of $\frac{1}{8}$, so the probability is $3×\frac{1}{8} = \frac{3}{8} = 3/8$
57. 20

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58. 18 mon = 1.5 yr
4%×1.5×1200 = 6%×1200 = 72
72 + 1200 = 1272

59. $a{:}b{:}c$ = 6:4:3
52 ÷ (6+4+3) = 4
a = 4×6 = 24

60. 40×2 = 80 miles
5 hr 20 min = $5\frac{1}{3}$ hr
80÷$5\frac{1}{3}$ = 15 miles (faster per hour)
40+15 = 55 mph

61. 8×7÷2 = 28

62. 12

63. $\sqrt{37}$
$\sqrt{37}$ = 6.08 (nearest 100th)

64. 1 + (-18x - 10x) = 57
-28x = 56
x = -2

65. $\frac{30}{40} = \frac{3}{4}$ hr
$\frac{40}{30} = \frac{4}{3}$ hrs
$\frac{3}{4} + \frac{4}{3}$ hrs.
Total distance: 30+40=70 miles.
average speed = $\frac{\text{total distance}}{\text{total time}} = \frac{70}{\frac{4}{3}+\frac{3}{4}}$ = 33.6

66. Let x, y, and z be the number of correct, incorrect and omissions.
Score = 4x – y = 77
There is only one solution:
x = 20, y = 3, and z = 2.
Ans = 20

67. (5×54 - 2×48)÷3
=(3×54 + 2×54 - 2×48)÷3
= 54 + 2×2
= 58

68. 160 – 40 = 120
$\frac{3}{4}$(120) = 90
90 + 40 = 130
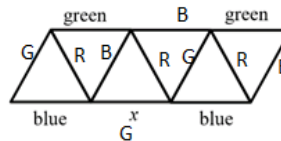
69. 1 hr in use = 8 hr on
(9 -1) + 8 = 16
24 – 16 = 8

70. Let
x:6th graders and
y:9th graders.
$\frac{2}{5}x = \frac{1}{3}y$ or 6x = 5y
$x{:}y$ = 5:6
5 + 6 = 11:# of combined 6th and 9th
5×$\frac{2}{5}$×2 = 4:# of buddies
Ans = $\frac{4}{11}$ = 4/11

71. total time needed = $\frac{1}{3}$ hr
$\frac{1/2}{2} = \frac{1}{4}$ hr
$\frac{1}{3} - \frac{1}{4} = \frac{1}{12}$ hr left
$\frac{1/2}{1/12} = \frac{12}{2}$ = 6 mph

72. 2×(1+9+16+25+4+36)
= 2(10+41+40)
= 2×91
= 182

73. only green

74. 0.7×0.8 = .56 = 1 – 44%
Ans = 44%

75. 60% passed, so 40% failed.
Let x be the mean of the failing scores.
6 = 0.6×8 + 0.4x
6 = 4.8 + 1.2
x = 3

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