MAP 280 (T2)   Issue 1

Answer Key

1. -1/2
2. -7/5
3. -9
4. 1
5. 5/6
6. Y = 1/4X - 7/4
7. Y = -1/4X - 5
8. Y = -1/2X - 9/2
9. -3X - 2Y = 3
10. 8X + 3Y = 1
11. $(3x + 2)(7x - 6)$
12. $3(2x + 5)(4x - 3)$
13. $(3x + 4)(4x - 5)$
14. $-(7x + 3)(4x - 5)$
15. $-(8x + 3)(5x - 3)$
16. $x^2 - 4x - 21$
17. $x^2 - 6x - 7$
18. $x^2 - 11x + 28$
19. $x^2 - 12x + 35$
20. $x^2 - 5x - 14$
21. $x^2 - 2x - 35$
22. $3x^2 - 10x - 8$
23. $6x^2 + 7x + 2$
24. $9x^2 - 9x + 2$
25. $18x^2 + 51x + 8$
26. $x = -2$
27. $x = -38$
28. $x = 4$
29. $x = -3$
30. $x = -2$
31. $5(x + 1) - 7(x - 3) = 28$
     $5x + 5 - 7x + 21 = 28$
     $-2x = 2$
     $x = -1$
32. $\frac{x+5}{2} + \frac{1}{4} = \frac{3}{4}$
     $\Rightarrow \frac{2x+10}{4} + \frac{1}{4} = \frac{3}{4}$ (common denominator)
     $\Rightarrow \frac{2x+10+1}{4} = \frac{3}{4}$
     $\Rightarrow \frac{2x+11}{4} = \frac{3}{4}$
     $\Rightarrow 2x + 11 = 3$
     $\Rightarrow 2x = -8$
     $\Rightarrow x = -4$
33. 24/7
34. $x=9$
35. D
     All numbers, infinitely many solutions
36. $\frac{8}{33}$
37. 1.08×10^8
     Ans = 9.08
38. 3
39. 75
40. $2x - 0.3 = 0.16$
     $2x = 0.46$
     $x = 0.23$
41. $2x - 1 = 225$
     $2x = 226$
     $x = 113$
42. ⅓ = 0.33⅓ = 33⅓ % = 33 1/3 %
43. 75% = 0.75
44. 13 quarts 11 pints = 18 quarts 1 pint = 4 gallons 2 quarts 1 pint = 4 gallons 5 pints = $4\frac{5}{8}$ gallons
45. 2×(18 ft 3 in + 10 ft 8 in) = 2×(28 ft 11 in) = 56 ft 22 in = 57 ft & 10 in
46. 5×4 = 20
47. 20 - 14 = 6 mph
     15÷6 = 2.5 (hr)
48. 20 - 2×2 = 16
     20² - 16² = 400 - 256= 144
49. 1 - ⅛ = $\frac{7}{8}$ = 7/8
50. 42000÷2520 = 4200÷252 ≈ 420÷25 = 16R*
     16 + 1 = 17
     30-pound is redundant or useless.)
51. 980÷7×10 = $1400
52. ∠BOD = 90°
     $x = 90 - 25 = 65$
53. 2×(2'3" + 1'8") = 2×(3'11") = 6'22" = 7'10" = 7 ft & 10 in
54. 22×9×7 = 1386 cu. inches
     1386÷231 = 6 (gallons)
55. Method I)
     75%:25% = 3:1
     420÷3 = $140

     Method II)
     420÷¾ = 560
     560 - 420 = $140

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56. $36 \times 10^6 \times 8 \times 10^6 = 2.88 \times 10^{14}$
    Ans = 2.88 (for a) & 14 (for b)

57. $x = 96$

58. 0.0012

59. 4

60. 4.8×10^5

61. $x - 3y - 6 = \frac{1}{3}$
    $x - 3y = 6\frac{1}{3}$
    $3x - 9y = 3(x - 3y) = 19$

62. $2x^2 - 3x - 2 = 0$
    $(2x + 1)(x - 2) = 0$
    $x = -0.5$ & 2

63. D

64. $\frac{10(10-3)}{2} = 35$

65. Let x = the investment at 12%
    $2x + 100$ = the investment at 15%
    $.12x + .15(2x + 100) = 855$
    $4x + 5(2x + 100) = 28500$
    $14x + 500 = 28500$
    $14x = 28000$
    $x = 2000$ (at 12%)
    $2x + 100 = 4100$
    $2000 + 4100 = \$6100$

66. $65 \times 1.2 = \$78$

67. B

68. $a = \frac{1}{2}(3 + 13) = 8$
    $b = -4$
    Ans = 8 & -4

69. $81 \div 45\% = 81 \div .45 = 180$

70. D
    $(68 - 32) \times \frac{5}{9} = 20$

71. D
    $(23 - 32) \times \frac{5}{9} = -5$

72. C
    $2 \times$area of ΔABC
    $= AB \times BC = AC \times BD$
    $12 \times 16 = 20 \times BD$
    $BD = 9.6$

73. B
    radius = 10
    area of semicircle = $\frac{1}{2}(10^2)\pi = 50\pi$
    area of the triangle = $\frac{1}{2} \times 12 \times 16 = 96$
    area of the shaded region = $50\pi - 96$ (in²)

74. $2 \times 5\frac{3}{4} - 10 = 1.5$ lbs

75. height = 12
    area of a triangle = $\frac{1}{2}(10 \times 12) = 60$
    Area of the rhombus: $2 \times 60 = 120$
    See the following figure.

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