

Answer Key

1. a) -2, 3, -7
b) 3, -7; -2
c) D, -2, 50
d) -2, -2, 50
2. a) 2, -2, 6
b) -2, 6; 2
c) U, 2, -32
d) 2, 2, -32
3. a) 2, 11, 3
b) 11, 3; 7
c) U, 7, -32
d) 2, 7, -32
4. a) 2, 7, -5
b) 7, -5; 1
c) U, 1, -72
d) 2, 1, -72
5. a) 3, -4, 10
b) -4, 10; 3
c) U, 3, -147
d) 3, 3, -147
6. Yes
7. False
8. No
9. No
10. slope(AF) = $\frac{1}{4}$
11. slope(BG) = $\frac{2}{3}$
12. slope(CH) = $\frac{3}{2}$
13. slope(DI) = 4
14. slope(EJ) = -4
15. slope(FK) = $-\frac{3}{2}$
16. (1, 1)
17. $(-\frac{5}{4}, 3)$
18. $(-4, \frac{9}{5})$
19. $(\frac{1}{7}, \frac{2}{7})$
20. $(-\frac{7}{9}, \frac{22}{9})$
21. -8, 16
22. 1, 0.25
23. $(2x - 1)^2$
24. $(3x + 5)^2$
25. 9, $(4x - 3)^2$
26. 64, 96, 17
27. 7, -28, 25
28. 10, 8, 9
29. 18, 60, 20
30. 1, 1.2, 14
31. 32, -144, 18
32. 75, 60, -25
33. 27, -144, 3
34. 64, -32, 30
35. 16, 80, 15
36. $2\sqrt{15}$
37. $3\sqrt{21}$
38. $4\sqrt{30}$
39. $20\sqrt{2}$
40. $18\sqrt{10}$
41. 400
42. 160000
43. 40
44. 8000
45. 0.2
46. 0.04
47. 0.0016
48. 0.008
49. 0.16
50. 0.5
51. 20
52. 84.5
53. 136
54. 62.5
55. $1.5\sqrt{13}$
56. $4\sqrt{17}$
57. $7\sqrt{2}$
58. $8\sqrt{26}$
59. $1.25\sqrt{29}$
60. $1.5\sqrt{41}$
61. $336.60 \div 30 = \$11.22$
62. $1 \text{ km} = 10^3 \text{ m} = 10^5 \text{ cm}$, thus 10^5 ants
63. $28 \times (1 + 30\%) = 28 \times 1.3 = \36.40
64. $40(\text{persons}) \times 12(\text{days}) = 480 \text{ person-days} = 24(\text{persons}) \times 20(\text{days})$
65. $50 \times (1 + 7\%) = 50 \times 1.07 = 53.5$
or
 $53.5 \div 1.07 = \$50.00$

MAP 280 (T2) Issue 5

66. Let n be the age of Noah, then $n + 11$ is the age of Devin.
 $n + 11 + n = 33$
 $2n = 22$
 $n = 11$
67. $4 + 5 = 9$
 $4 \times 5 = 20$
 $20 - 9 = \boxed{11}$
68. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
69. $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$
 $\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$
 $\frac{1}{6} + \frac{1}{6} = \frac{1}{3}$
70. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
71. $1 - \frac{1}{4} = \frac{3}{4}$
 Note that the product is either an even number or an odd number. Now that the probability of getting a product of odd number is $\frac{1}{4}$, the probability of getting a product of even number must be $1 - \frac{1}{4} = \frac{3}{4}$.
72. $2 \times 2 \times 2 = \boxed{8}$
73. $30 = 2 \times 3 \times 5$
 $(1 + 2)(1 + 3)(1 + 5)$
 $= 3 \times 4 \times 6$
 $= \boxed{72}$
74. For a cube
 # vertices = 8
 # edges = 12
 # faces = 6
 The cutting of a square hole adds
 # vertices = 8
 # edges = 12
 # faces = 4
 For the remaining solid, the number
 (a) # vertices = $\boxed{16}$
 (b) # edges = $\boxed{24}$
 (c) # faces = $\boxed{10}$
75. The value of 4 quarters, one dime and two nickels is
 $4Q + 1D + 2N = \$1.20$.
 $36 \div 1.20 = 30$
 $30 \times 4 = 120$ (Q)
 $30 \times 1 = 30$ (D)
 $30 \times 2 = 60$ (N)
76. $240 \div 60 = 4$ (hr)
 $4 - 1 = 3$ hr
 $240 \div 3 = 80$ (mph)
77. $\frac{240}{\frac{240}{m} - 1} = \frac{240}{\frac{240 - m}{m}} = \frac{240m}{240 - m}$
78. $\frac{d}{\frac{d}{m} - 1} = \frac{d}{\frac{d - m}{m}} = \frac{dm}{d - m}$
79. $45 \text{ min} = \frac{3}{4} \text{ hr}$
 $60 \div \frac{3}{4} = 80 \text{ mph}$
80. the total distance = $d + e + f$
 the total time = 3
 average speed = $\frac{1}{3}(d + e + f)$