Answer Key

1. {1, 3, 23, 69 }
2. {1, 2, 29, 58 }
3. {1, 2, 37, 74 }
4. {1, 5, 13, 65 }
5. {1, 3, 7, 9, 21, 63 }
6. {1, 2, 4, 17, 34, 68 }
7. {1, 2, 5, 7, 10, 14, 35, 70 }
8. {1, 2, 3, 6, 11, 22, 33, 66 }
9. {1, 2, 4, 8, 16, 32, 64 }
10. { 23, 29, 31, 37 }
11. B

$\frac{2}{3} = \frac{8}{\mathbf{12}} < \frac{9}{\mathbf{12}} = \frac{3}{4}$

12. A

$\frac{1}{2} = \frac{5}{10} > \frac{4}{10} = \frac{2}{5}$

13. A

$$\frac{5}{6} = \frac{25}{30} > \frac{24}{30} = \frac{4}{5}$$

14. B
15. B
16. B
17. A

$\frac{3}{4} \xrightarrow{\times 5} \frac{15}{20}$

$\frac{7}{10} \xrightarrow{\times 2} \frac{14}{20}$, so $\frac{3}{4}$ is larger.

14. B

$$\frac{8}{15} < \frac{10}{15} = \frac{2}{3}$$

15. B
16. B

17. A

$\frac{3}{4} \xrightarrow{\times 5} \frac{15}{20}$

$\frac{7}{10} \xrightarrow{\times 2} \frac{14}{20}$, so $\frac{3}{4}$ is larger.

15. B

$$\frac{3}{12} = \frac{6}{24} < \frac{15}{24} = \frac{5}{8}$$

16. B

17. A

$\frac{3}{4} \xrightarrow{\times 5} \frac{15}{20}$

$\frac{7}{10} \xrightarrow{\times 2} \frac{14}{20}$, so $\frac{3}{4}$ is larger.

16. B

$$\frac{2}{5} = \frac{6}{15} < \frac{10}{15} = \frac{2}{3}$$

17. A

$\frac{3}{4} \xrightarrow{\times 5} \frac{15}{20}$

$\frac{7}{10} \xrightarrow{\times 2} \frac{14}{20}$, so $\frac{3}{4}$ is larger.

17. A

$\frac{3}{4} \xrightarrow{\times 5} \frac{15}{20}$

$\frac{7}{10} \xrightarrow{\times 2} \frac{14}{20}$, so $\frac{3}{4}$ is larger.

18. B

$\frac{1}{4} \xrightarrow{\times 3} \frac{3}{12}$

$\frac{1}{3} \xrightarrow{\times 2} \frac{4}{12}$

19. A

$\frac{5}{12} \xrightarrow{\times 2} \frac{10}{24}$

$\frac{7}{24} \xrightarrow{\times 1} \frac{7}{24}$

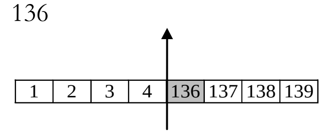
20. A

$\frac{13}{24} \xrightarrow{\times 3} \frac{39}{72}$

$\frac{15}{36} \xrightarrow{\times 2} \frac{30}{72}$

21. 9
22. 60
23. 50
24. 6
25. 20
26. 15
27. 7
28. 30
29. 4
30. 18
31. 1.2
32. 12
33. 100
34. 80
35. 4
36. 60
37. 10
38. 80
39. 8
40. 100
41. 0.012
42. 0.12

43. 0.01
44. 0.008
45. 0.04
46. 0.006
47. 0.1
48. 0.008
49. 0.0008
50. 0.01
51. 15
52. 0
53. 14
54. 1
55. 14
56. 12
57. 61
58. 15
59. 14
60. 9
61. 7/36
    LCD = 36
62. 7/72
    LCD = 72
63. 13/12
    LCD = 12
64. 7/40
    LCD = 40
65. 2/9
    LCD = 9
66. 1/12
    LCD = 12
67. 5/24
    LCD = 24
68. 3/20
    LCD = 20
69. 2/15(=8/60)
    LCD = 60
70. 1/15(=2/30)
    LCD = 30
71. 21
72. 21
73. 17
74. 32
75. 37
76. 31
77. 36
78. 44
79. 175
80. 119
81. 65
82. 136



83. 6×1234321 = 7405926
84. 8 corners and each corner will gain 3 more faces after cutting.
    6 + 3×8 = 30
85. 3 different arrangements
    1. (AB)(CD)
    2. (AC)(BD)
    3. (AD)(BC)

86. 210÷7 = 30
    30 = 2×3×5 = LCM(1, 2, 3, 5)
    The four numbers are:
    7, 14, 21, and 35
    Sum = 7×(1+2+3+5) = 77
87. 100×2 = 200, and 100×3 = 300
    Let consider 201, 202, 301, and 302.
    201 is a 3-multiple. None of the other is a multiple of 3 or 4.

    201÷3 = 67
88. LCM(3, 5) = 15
    15 – 2 = 13
89. Danna told the truth and Cherry ate it.
    Since there is only one true statement.
    Either Cherry or Danna is truthful.
    Let Cherry be true and Danna be not true, Danna ate it. Brenda said it right, too. It won't work.

    Let Danna be true and Cherry be untrue. So, Cherry ate it. Alice and Breda both lied. It works. ✓
90. Note: The area of a square = $\frac{1}{2}$(its diagonal)^2.

    Let 4 be the length of the diagonal of the original square.
    The diagonal of the left folded square = 2.
    The diagonal of the left folded square = 3.
    The diagonal of the overlapping square = 1.
    The area of the shaded region = $\frac{1}{2}(4^2 – (3^2 + 2^2 – 1^2) = \frac{1}{2}(4) = 2$.
    The area of the original square = $\frac{1}{2}\times 4^2 = 8$.
    The ratio is 8 : 2 = 4 : 1 = 64 : 16 cm^2