

Answer Key

- | | |
|-----------------------|----------------------------------------------------------------------------------|
| 1. 19 | 32. 192 |
| 2. 16 | 33. 19200 |
| 3. 22 | 34. 315 |
| 4. 21 | 35. 3150 |
| 5. 13 | 36. $8/125$ |
| 6. 24 | 37. $4/25$ |
| 7. 45 | 38. $2/5$ |
| 8. 114 | 39. $1/8$ |
| 9. 111 | 40. $1/1024$ |
| 10. 189 | 41. $1/32$ |
| 11. 5 | 42. 4 |
| 50 | 43. $1/64$ |
| 5 | 44. $2/2$ |
| 50 | 45. 3 |
| 12. 7 | 46. $2/3$ |
| 70 | 47. $3/7$ |
| 7 | 48. $2/7$ |
| 70 | 49. $7/25$ |
| 13. 8 | 50. $3 \frac{1}{5}$ |
| 80 | 51. $3 \frac{1}{5}$ |
| 8 | 52. $2 \frac{5}{8}$ |
| 80 | 53. $2 \frac{5}{8}$ |
| 14. 9 | 54. $1 \frac{1}{6}$ |
| 90 | 55. $3/4$ |
| 9 | 56. $0.4 = 40\%$ |
| 900 | 57. 4 |
| 15. 4 | 58. 9 |
| 40 | 59. $\frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \times 144 = \boxed{360}$ |
| 4 | 60. $4 \frac{13}{24} = 4 \frac{13}{24}$ |
| 400 | 61. $5/7$ |
| 16. $23/25$ | 62. $A = 56$ |
| 17. $3/35$ | 63. $882 \div 9 = 98$ |
| 18. $1/24$ | 64. $1/21$ |
| 19. $11/75$ | 65. $750 \div 50 = \boxed{1.5 \text{ gal per sec}}$ |
| 20. $7/36$ | 66. $600 \div 1.5 = 400 \text{ sec} = \boxed{6 \text{ min } 40 \text{ sec}}$ |
| 21. $23/56$ | 67. Brian: |
| 22. $47/84$ | $\frac{1}{10} \times 300 = 30$ |
| 23. $47/105$ | $50 + 30 = 80$ |
| 24. $3 \frac{29}{36}$ | |
| 25. $2 \frac{2}{9}$ | |
| 26. 81 | |
| 27. 81 | |
| 28. 126 | |
| 29. 12600 | |
| 30. 225 | |
| 31. 22500 | |

MAP 255 (T2) Issue 7

68. C
Alex: $\frac{1}{6} \times 300 = 50$
Brian: 80
Calvin:
 $300 - 50 - 80 = 170$
 $170 \div 2 = 85$
 $85 + 10 = 95$
69. $54 - 15 - 3 \times 9 = 12$
 $\frac{1}{2} \times 12 \times 9 = 54$
 $54 + 9^2 = 135$
70. 63 lb 8 oz - 36 lb 9 oz
= 26 lb & 15 oz
71. $10 \times 10 = 100$ (square area)
 $\frac{1}{2}(20 \times 10) = 100$
 $x = 10$ in
72. A = 1
B = 5
C = 3
D = 7
 $1535 \times 5 = 7675$
 $C + D = 3 + 7 = 10$
73. $3.25 \times 200 = 650$
 $15.75 \times 6 = 94.5$
 $650 + 94.50 = \$744.50$
74. $343 \div 7 = \$49.00$
75. $35 \times 4 = 140$
 $140 - 50 = 90$
 $90 \div 3 = 30$ pounds
76. 3 in (A) & 8 in (B) & 8 in (C) & 3 in (D)
77. 2 in (A) & 10 in (B) & 3 in (C) & 4 in (D)
78. 3 in (A) & 5 in (B) & 2 in (C) & 7 in (D)
79. 5 in (A) & 7 in (B) & 4 in (C) & 2 in (D)
80. 4 in (A) & 6 in (B) & 6 in (C) & 5 in (D)

Answer Key

1. .018
2. .006
3. .014
4. .006
5. .009
6. .016
7. .009
8. .014
9. .0006
10. .0016
11. 16
12. 32
13. 64
14. 128
15. 256
16. 512
17. 27
18. 81
19. 243
20. 729
21.
$$\begin{array}{r} \frac{10}{15} \\ - \frac{1}{15} \\ \hline \end{array} = \frac{9}{15} = \frac{3}{5} = 3/5$$
22.
$$\begin{array}{r} 6\frac{15}{20} \\ - \frac{11}{20} \\ \hline \end{array} = 6\frac{4}{20} = 6\frac{1}{5} = 6\ 1/5$$
23.
$$\begin{array}{r} 3\frac{16}{30} \\ - \frac{25}{30} \\ \hline \end{array} = 2\frac{21}{30} = 2\frac{7}{10} = 2\ 7/10$$
24.
$$\begin{array}{r} \frac{20}{30} \\ - \frac{3}{30} \\ \hline \end{array} = \frac{17}{30} = 17/30$$
25.
$$\begin{array}{r} \frac{23}{24} \\ + \frac{16}{24} \\ \hline \end{array} = \frac{39}{24} = \frac{13}{8} = 1\frac{5}{8} = 1\ 5/8$$
26.
$$\begin{array}{r} \frac{28}{48} \\ - \frac{18}{48} \\ \hline \end{array} = \frac{10}{48} = \frac{5}{24} = 5/24$$
27.
$$\begin{array}{r} 3\frac{10}{12} \\ - \frac{9}{12} \\ \hline \end{array} = 3\frac{1}{12} = 3\ 1/12$$
28.
$$\begin{array}{r} \frac{22}{30} \\ + \frac{21}{30} \\ \hline \end{array} = 1\frac{13}{30} = 1\ 13/30$$
29. $2 \times (3\frac{3}{4} + 8) = 23\ 1/2$ (inches)
30. $35\frac{1}{2} + 20\frac{3}{4} + 15\frac{1}{8} = 70\frac{4+6+1}{8} = 71\ 3/8$ (pounds)
31. 2/3
32. 3/11
33. 4/23
34. 5/37
35. 6/11
36. 7/51
37. 8/25
38. 9/55
39. 9/25
40. 6
41. $108 \times (1 - 2/9) = 84$
42. $28 / (1 + 2/5) = 20$
43. $3 \times 20 + 4 \times 5 + 11 \times 2 = 102$
44. $32 \times (1 - 1/8) = 28$
45. $47 - 12 \times (3 + 1/3) = 7$
46. $8 \times (1 - 1/4) = 6$
47. $40 / 8 \times 1 = 5$
48. $3.5 \times 6.00 + 3 \times 2.00 = 27$
49. $70 / (1 - 2/9) = 90$
50. $84 / (1 - 1/7) = 98$
51. $99 \times (1 - 4/9) = 55$
52. $5280 \times (1 - 4/5) = 1056$
53. $25 \times (1 - 4/5) = 5$
54. (a) π (b) 0.25π
55. $2 \times (10^2) / 25 = 8$
56. $5 / 1 \times 5 = 25$
57. $600 \times 3 \times 20 / 100 = 360$
58. (a) $2^2 = 4$
(b) $0.2^2 = 0.04$
(c) $20^2 = 400$
59. $20 / 5 \times 3 = 12$
60. $6 \times 2 - (2) = 10$
61. Only 4 different letters: M, I, S, and P.
5 colors to apply on 4 letters:
 $5 \times 4 \times 3 \times 2 = 120$

MAP 255 (T2) Issue 8

62. $10001x = 10000x + x$
 x must be a 4-digit number.

63. $X = \underline{6}$

$$\begin{array}{r} \\ \\ + \\ \hline 1 \end{array}$$

64. BHD = 284

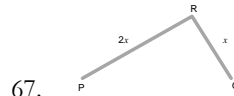
ABD	124	A=1
AHD	184	D=4
DAD	414	
HAB	812	H=8 B=2
BHD	284	

65. 537

$$\begin{array}{r} \\ \\ + \\ \hline 5 \end{array}$$

$$\begin{array}{r} \\ \\ + \\ \hline 5 \end{array}$$

66. $4 \times 0.6 = 2.4$ min
 avg speed = $\frac{\text{tot distance}}{\text{tot time}} = \frac{1+1}{\frac{4}{60} + \frac{2.4}{60}} = \frac{120}{6.4} = \frac{150}{8} = \frac{75}{4}$
 = 18.75 mph



67. Time needed by starting P:

$$\frac{2x}{3} + \frac{x}{5}$$

Time needed by starting Q:

$$\frac{2x}{5} + \frac{x}{3}$$

The difference of time

$$\left(\frac{1}{3} - \frac{1}{5}\right)x = \frac{2}{3}$$

$$\frac{2x}{15} = \frac{2}{3}$$

$$2x = 10$$

$$3x = \boxed{15}$$

68. A

One dimensional direction, either going forward or backward.

Only B B R B B R can be differentiated for the direction.

If B B R is going forward, then R B B is going backward.

69. $B + C = B \Rightarrow C = 0$

$$A+B+A = BC \Rightarrow B = 2 (\neq 1, \text{why?})$$

$$9 + 2 + 9 = 20$$

$$A = \boxed{0}$$

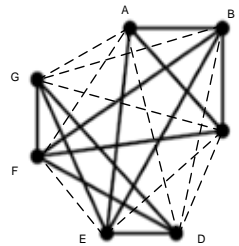
70. 9 roads listed below.

AD, AF, AG

BD, BG,

CD, CE, CG

EF



Answer Key

1. .0024

2. .0021

3. .015

4. .0012

5. .021

6. .15

7. .0015

8. .021

9. .018

10. .0018

11. .12

12. .024

13. .24

14. .012

15. .024

16. .18

17. .012

18. .21

19. .018

20. .015

21. 64

22. 256

23. 125

24. 625

25. 100

26. 1000

27. 10000

28. 400

29. 8000

30. 160000

$$31. \begin{array}{r} \frac{9}{12} \\ + \frac{2}{12} \\ \hline \frac{11}{12} \end{array} = \frac{11}{12} = 11/12$$

$$32. \begin{array}{r} \frac{2}{12} \\ + \frac{5}{3} \\ \hline \frac{5}{3} \frac{5}{12} \end{array} = 5 \frac{5}{12}$$

$$33. \begin{array}{r} 2 \frac{15}{24} \\ - \frac{8}{24} \\ \hline 1 \frac{7}{24} \end{array} = 1 \frac{7}{24}$$

$$34. \begin{array}{r} 4 \frac{15}{20} \\ - 1 \frac{6}{20} \\ \hline 3 \frac{9}{20} \end{array} = 3 \frac{9}{20} = 3 \frac{9}{20}$$

$$35. 21 \frac{5}{12} - 11 \frac{2}{3} = 9 \frac{9}{12} - 9 \frac{3}{4} = 9 \frac{3}{4}$$

$$36. \begin{array}{r} \frac{9}{12} \\ + \frac{10}{12} \\ \hline \frac{19}{12} \end{array} = 1 \frac{7}{12} = 1 \frac{7}{12}$$

$$37. \begin{array}{r} \frac{13}{24} \\ - \frac{9}{24} \\ \hline \frac{4}{24} \end{array} = \frac{1}{6} = 1/6$$

$$38. \begin{array}{r} \frac{3}{35} \\ + \frac{10}{35} \\ \hline \frac{13}{35} \end{array} = \frac{13}{35} = \frac{2}{7} = 2/7$$

$$39. \begin{array}{r} \frac{9}{24} \\ - \frac{4}{24} \\ \hline \frac{5}{24} \end{array} = \frac{5}{24} = 5/24$$

$$40. \begin{array}{r} 1 \frac{28}{24} \\ - \frac{5}{24} \\ \hline 1 \frac{23}{24} \end{array} = 1 \frac{23}{24} = 1 \frac{23}{24}$$

$$41. \begin{array}{r} \frac{21}{48} \\ - \frac{43}{48} \\ \hline \frac{21}{48} \end{array} = \frac{5}{48} = 5/48$$

$$42. \begin{array}{r} \frac{12}{16} \\ + \frac{5}{16} \\ \hline 1 \frac{17}{16} \end{array} = 1 \frac{1}{16} = 1 \frac{1}{16}$$

$$43. \begin{array}{r} \frac{4}{30} \\ + \frac{1}{30} \\ \hline \frac{5}{30} \end{array} = \frac{1}{6} = 1/6$$

$$44. \begin{array}{r} 5 \frac{16}{30} \\ - 5 \frac{5}{30} \\ \hline 11 \frac{11}{30} \end{array} = \frac{11}{30} = 11/30$$

$$45. 2 \frac{3}{5} - 1 \frac{2}{3} = \frac{14}{15} = 14/15$$

$$46. \begin{array}{r} \frac{9}{12} \\ + \frac{2}{12} \\ \hline \frac{11}{12} \end{array} = \frac{11}{12} = 11/12$$

$$47. \begin{array}{r} \frac{2}{25} \\ + \frac{10}{25} \\ \hline \frac{12}{25} \end{array} = \frac{12}{25} = 12/25$$

48. 44

49. 45

50. 115

51. 2/5

52. 3/14

53. 4/27

54. 5/42

55. 6/17

MAP 255 (T2) Issue 9

56. $7/58$
 57. $8/33$
 58. $9/64$
 59. $9/17$
 60. $7/6$
 61. $16 + (12-8) \times (7-3) = 32$
 62. $30 \times (1 - 2/3) = 10$
 63. $90 \times (1 - 5/9) = 40$
 64. $12 \times (2 + 3/4) = 33$
 65. $52 / (9-5) \times 5 = 65$
 66. $5280 \times (1 - 1/4) = 3960$
 67. $\frac{1}{4} \times 16 \times 6 = 24$ ounces
 68. (a) 10π (b) 25π
 69. (a) $(7+3)/2 = 5$
 (b) $6 \times (7+3)/2 = 30$
 70. $3 \times 6 / (3/4) = 24$
 71. $2 \times (16^2) / 16 = 32$
 72. $2 \times (12^2) / 24 = 12$
 73. $2 \times (24^2) / 36 = 32$
 74. $2 \times (18^2) / 54 = 12$
 75. (a) $(-3)^2 = 9$
 (b) $30^2 = 900$
 (c) $0.3^2 = 0.09$
 76. $14 / 2 \times 5 = 35$
 77. (a) $13 \times 12 = 156$
 (b) $9 \times 17 = 153$
 (c) $50 / 25 = 2$
 78. $21 / 7 \times 5 = 15$
 79. $(2 \times 60 + 3 \times 40) / 5 = 48$
 80. $-3 \times 2 - (-5) = -1$
 81. Black: $9.5 \times 2 = 19$
 Gray: $11 \times 1 = 11$
 $19 + 11 = 30$
 82. $5 \times 2 \times 10 = 100$
 $5 \times 10 \div 2 \times 3 = 75$
 $100 + 75 = \underline{175}$
 83. Five different sizes
 $1 \times 1, 2 \times 2, 3 \times 3, 4 \times 4, 5 \times 5$
 84. 27 of them

1×1	13
2×2	4
3×3	5
4×4	4
5×5	1
Total	27

85. 2, 3, and 6

Answer Key

1. 0.027
2. 0.012
3. 0.02
4. 0.27
5. 0.0012
6. 0.027
7. 0.002
8. 0.0008
9. 0.016
10. 0.16
11. 0.12
12. 0.08
13. 0.2
14. 0.0016
15. 0.0027
16. 0.02
17. 0.016
18. 0.008
19. 0.012
20. 0.008
21. 900
22. 27000
23. 810000
24. 1600
25. 64000
26. 125000
27. 6250000
28. 3600
29. 216000
30. 4900
31.
$$\begin{array}{r} 4\frac{1}{24} \\ - \frac{21}{24} \\ \hline \end{array} + \begin{array}{r} 3\frac{1}{24} \\ + \frac{3}{24} \\ \hline \end{array} = 3\frac{4}{24} = 3\frac{1}{6} = 3\frac{1}{6}$$
32.
$$\begin{array}{r} \frac{9}{15} \\ - \frac{5}{15} \\ \hline \end{array} = \frac{4}{15} = 4/15$$
33.
$$\begin{array}{r} 3\frac{8}{12} \\ + 100\frac{5}{12} \\ \hline \end{array} = 103\frac{13}{12} = 104\frac{1}{12} = 104\frac{1}{12}$$
34. $4\frac{1}{3} - 1\frac{2}{3} = 3\frac{1}{3} - \frac{2}{3} = 2\frac{2}{3}$
35.
$$\begin{array}{r} \frac{30}{5} \\ + \frac{5}{30} \\ \hline \end{array} = \frac{26}{30} = \frac{13}{15} = 13/15$$
36. $1\frac{1}{3} - \frac{3}{4} = \frac{7}{12} = 7/12$
37.
$$\begin{array}{r} \frac{9}{24} \\ + \frac{4}{24} \\ \hline \end{array} = \frac{13}{24} = 13/24$$
38.
$$\begin{array}{r} \frac{5}{24} \\ + \frac{9}{24} \\ \hline \end{array} = \frac{14}{24} = \frac{7}{12} = 7/12$$
39.
$$\begin{array}{r} 4\frac{9}{15} \\ - \frac{10}{15} \\ \hline \end{array} + \begin{array}{r} 3\frac{9}{5} \\ + \frac{5}{5} \\ \hline \end{array} = 3\frac{14}{15} = 3\frac{14}{15}$$
40.
$$\begin{array}{r} 2\frac{16}{32} \\ - \frac{31}{32} \\ \hline \end{array} + \begin{array}{r} 1\frac{16}{32} \\ + \frac{1}{32} \\ \hline \end{array} = 1\frac{17}{32} = 1\frac{17}{32}$$
41.
$$\begin{array}{r} \frac{28}{60} \\ - \frac{21}{60} \\ \hline \end{array} = \frac{7}{60} = 7/60$$
42. $\frac{7}{12} - \frac{3}{8} = \frac{14-9}{24} = \frac{5}{24} = 5/24$
43.
$$\begin{array}{r} \frac{21}{60} \\ - \frac{2}{60} \\ \hline \end{array} = \frac{19}{60} = 19/60$$
44. $8\frac{1}{8} + \frac{2}{8} = 8\frac{3}{8} = 8\frac{3}{8}$
45. $\frac{21}{35} - \frac{11}{35} = \frac{10}{35} = \frac{2}{7} = 2/7$
46.
$$\begin{array}{r} 2\frac{8}{24} \\ - \frac{21}{24} \\ \hline \end{array} + \begin{array}{r} 1\frac{8}{24} \\ + \frac{3}{24} \\ \hline \end{array} = 1\frac{11}{24} = 1\frac{11}{24}$$
47. $\frac{21-1}{35} = \frac{20}{35} = \frac{4}{7} = 4/7$
48.
$$\begin{array}{r} \frac{9}{24} \\ + \frac{4}{24} \\ \hline \end{array} = \frac{13}{24} = 13/24$$
49. 24
50. 40
51. 2/7
52. 3/17
53. 4/31
54. 5/8
55. 6/23
56. 7/10
57. 8/41
58. 9/73
59. 10/11
60. 7/12

MAP 255 (T2) Issue 10

61. $27/2 + 0.5 = 14$

62. $18 \times (1 - 2/3) = 6$

63. $26/13 \times 4.5 = 9$

64. $84 / ((16/8) \times 7) = 6$

65. $25/5 \times 2 = 10$

66. $35 \times \frac{4}{5} = 28$
 $35 - 28 = 7$ (not ripe)

67. $(31+3)/2 = 17$

68. $36 \times \frac{1}{3} = 12$
 $36 - 12 = 24$ (not ripe)

69. $8 \times (21/3) = 56$

70. $120 - 120 \times (3/8) = 75$

71. $72 \times (1 - 4/9) = 40$

72. $1 \times 12 \times (1 - 2/3) = 4$

73. $4 \times 20 + 5 \times 5 + 8 \times 2 = 121$

74. $5280 \times (1 - 1/3) = 3520$

75. $60/2 - 23 = 7$

76. (a) 8π (b) 16π

77. $\frac{4}{5}$

78. $(28-8)/(5-1) = 5$

79. (a) 6 (b) 4 (c) 24

80. $3 \times 2 - (-3) = 9$

81. 5

5 of them: 18, 29, 70, 81, 92

82. 1.5

$x = \frac{3}{5} + \frac{3}{5}x$

$\frac{2}{5}x = \frac{3}{5}$

$x = \boxed{1.5}$

83. 3

$10001 - 9998 = \boxed{3}$

84. 99

$49 \div 3 = 16$ R 1

$3 \times 2 \times 16 = 96$

$3 \times 1 = 3$

$96 + 3 = \boxed{99}$

85. 20

$10 + 50 = 60$

$48 + 50 = 98$

From 10 to 48, there are

$(48 - 10) \div 2 + 1 = \boxed{20}$ pairs

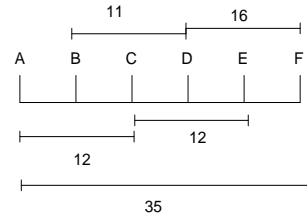
86. 16

$EF = AF - (AC + CE) = 11$

$BE = BD + DF - EF$

$= 11 + 16 - 11$

$= \boxed{16}$

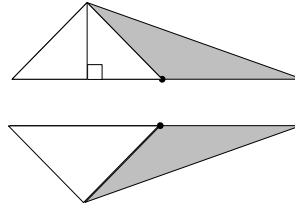


87. 9781920

88. 49

The shaded and unshaded triangles have the same area since both have the same height with the same base length.

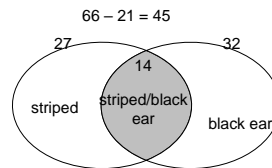
So, the combined shaded area = $\boxed{49}$.



89. 14

$66 - 21 = 45$

$27 + 32 - 45 = \boxed{14}$



90. 3

$20 = 4 \times 5 = 2 \times 10$

Only if Ann's number = $\boxed{3}$, she can be ascertain that Bill is a factor of 20.

Answer Key

- | | |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. $2/9$ | 42. 0.72 |
| 2. $3/20$ | 43. 0.03 |
| 3. $4/35$ | 44. 0.0036 |
| 4. $5/13$ | 45. 0.004 |
| 5. $6/29$ | 46. 0.1 |
| 6. $7/17$ | 47. 0.0021 |
| 7. $8/49$ | 48. 0.027 |
| 8. $9/82$ | 49. 0.54 |
| 9. $10/21$ | 50. 0.014 |
| 10. $7/18$ | 51. 4900 |
| 11. $60 \times 1 + 60/5 \times 2 = 84$ | 52. 3600 |
| 12. $(36 \times 3 + 36/9 \times 4)/4 = 31$ | 53. 6400 |
| 13. $4 \times 20 + 3 \times 5 + 10 \times 2 = 115$ | 54. 512000 |
| 14. $76/(2 + 5/7) = 28$ | 55. 8100 |
| 15. $84 - 84 \times (1/7) = 72$ | 56. 2500 |
| 16. $102/3 \times 1 = 34$ | 57. 121 |
| 17. $24 \times 1 + 24/3 \times 1 = 32$ | 58. 1331 |
| 18. $18/6 \times 5 = 15$ | 59. 729000 |
| 19. $50/5 \times 2 = 20$ | 60. 40960000 |
| 20. $120 - 120 \times (1/8) = 105$ | 61. $\begin{array}{r} \frac{10}{12} \\ - \frac{1}{12} \\ \hline \frac{9}{12} = \frac{3}{4} \end{array}$ |
| 21. $((3 \times 100)/50) \times 5 = 30$ | 62. $\begin{array}{r} 3 \frac{12}{30} \\ + 2 \frac{25}{30} \\ \hline 5 \frac{37}{30} = 6 \frac{7}{30} \end{array}$ |
| 22. $105/7 \times 4 = 60$ | 63. $\begin{array}{r} 1 \frac{12}{30} \\ - \frac{25}{30} \\ \hline \frac{12}{30} \\ + \frac{5}{30} \\ \hline \frac{17}{30} \end{array}$ |
| 23. $6 \times 4/(2/3) = 36$ | 64. First, add all the whole numbers,
$= 10 + (\frac{2}{5} + \frac{1}{4} + \frac{1}{2})$
Then, add the fractions.
$= 10 \frac{8+3+6}{12}$
$= 10 \frac{17}{12}$
$= 11 \frac{5}{12} = 11 \frac{5}{12}$ |
| 24. $800 \times 3 \times 30/100 = 720$ | 65. $\begin{array}{r} 1 \frac{20}{48} \\ - \frac{39}{48} \\ \hline \frac{20}{48} \\ + \frac{9}{48} \\ \hline \frac{29}{48} \end{array}$ |
| 25. $1500 \times 2 \times 60/100 = 1800$ | 66. $\begin{array}{r} 2 \frac{20}{24} \\ - \frac{24}{24} \\ \hline \frac{11}{24} \end{array}$ |
| 26. $42/14 \times 5 = 15$ | 67. $\begin{array}{r} \frac{21}{35} \\ + \frac{1}{35} \\ \hline \frac{22}{35} \end{array}$ |
| 27. (a) 10 (b) 8 (c) 80 | |
| 28. $(2 \times 42 + 3 \times 32)/5 = 36$ | |
| 29. $(35 \times 5 - 51)/4 = 31$ | |
| 30. $(7 \times 52 - 5 \times 50)/2 = 57$ | |
| 31. 0.048 | |
| 32. 0.024 | |
| 33. 0.032 | |
| 34. 0.032 | |
| 35. 0.2 | |
| 36. 0.02 | |
| 37. 0.003 | |
| 38. 0.0063 | |
| 39. 0.016 | |
| 40. 0.045 | |
| 41. 0.045 | |

MAP 255 (T2) Issue 11

$$68. \quad \begin{array}{r} \frac{7}{8} \\ - \frac{5}{12} \\ \hline \end{array} = \frac{21}{24} - \frac{10}{24} = \frac{11}{24}$$

$$69. \quad \begin{array}{r} \frac{5}{6} \\ + \frac{4}{6} \\ \hline \end{array} = \frac{9}{6} = \frac{3}{2} = 1\frac{1}{2}$$

$$70. \quad \begin{array}{r} \frac{16}{30} \\ - \frac{5}{30} \\ \hline \end{array} = \frac{11}{30}$$

$$71. \quad \begin{array}{r} \frac{15}{20} \\ + \frac{14}{20} \\ \hline \end{array} = \frac{29}{20} = 1\frac{9}{20}$$

$$72. \quad \begin{array}{r} \frac{4}{12} \\ + \frac{2}{12} \\ \hline \end{array} = \frac{11}{12}$$

$$73. \quad \begin{array}{r} \frac{1}{8} \\ + \frac{4}{8} \\ \hline \end{array} = \frac{11}{8} = 1\frac{3}{8}$$

$$74. \quad \begin{array}{r} 2\frac{2}{60} \\ - \frac{21}{60} \\ \hline \end{array} = \begin{array}{r} 1\frac{62}{60} \\ - \frac{21}{60} \\ \hline \end{array} = 1\frac{41}{60}$$

$$75. \quad \begin{array}{r} \frac{9}{15} \\ - \frac{5}{15} \\ \hline \end{array} = \frac{4}{15}$$

$$76. \quad \begin{array}{r} \frac{28}{60} \\ - \frac{15}{60} \\ \hline \end{array} = \frac{13}{60}$$

$$77. \quad \begin{array}{r} 1\frac{14}{18} \\ + 3\frac{15}{18} \\ \hline \end{array} = 4\frac{29}{18} = 5\frac{11}{18}$$

$$78. \quad \frac{7}{12} + \frac{5}{8} = \frac{14+15}{24} = \frac{29}{24} = 1\frac{5}{24}$$

$$79. \quad \begin{array}{r} \frac{16}{32} \\ + \frac{5}{32} \\ \hline \end{array} = \frac{21}{32}$$

$$80. \quad \frac{4+5}{24} = \frac{3}{8}$$

$$81. \quad 76$$

$$\frac{1}{3} \times 57 \times 4 = \boxed{76}$$

$$82. \quad \frac{1}{12}$$

$$83. \quad \text{Each pair sums up to 100.}$$

$$12 + 88 = 100$$

$$8 + 8 = \boxed{16}$$

$$84. \quad 1 \text{ and } -1$$

$$85. \quad 2 + 7 \times 4 = 30$$

$$37 - 30 = \boxed{7}$$

$$86. \quad B$$

$$87. \quad 10,000 \div 1000 = 10$$

$$1.8 \times 10 = \boxed{18 \text{ km}}$$

$$88. \quad \text{Move 1 chick from each of 3 coops to this empty coop.}$$

There will be 4 coops with 3 chickens.

$$89. \quad 4 + 8 = \boxed{12}$$

$$90. \quad 3 \times 4 + 4 \times 8 = 12 + 32 = \boxed{44 \text{ chickens}}$$

Answer Key

1. $60 \times 1 + 60/3 \times 1 = 80$

2. $9 \times (28/7) = 36$

3. $48 \times (7/6) = 56$

4. $45 \times (4/9) = 20$

5. $2 \times 4.50 + 5 \times 5.40 = 36$

6. $13/(4-3) \times 3 = 39$

7. $45 \times (4/10) = 18$

8. $24 \times 1 + 24/8 \times 3 = 33$

9. $7.50 \times 7 \times 3 \times 4 = 630$

10. $((3 \times 100)/20) \times 5 = 75$

11. $70/5 \times 2 = 28$

12. $27 \times \frac{4}{9} = 12$

$27 - 12 = 15$ (not ripe)

13. $117 \times (1 - 1/9) = 104$

14. (a) $4 + 3 = 7$

(b) $4 - 2 = 2$

15. (a) 10π (b) 25π

16. (a) 6π (b) 9π

17. $\frac{3}{8}$

18. (a) $18^2 = 324$

(b) $180^2 = 32400$

(c) $1.8^2 = 3.24$

19. $10/2 \times 3 = 15$

20. (a) 6 (b) 15 (c) 90

21. $2/11$

22. $3/23$

23. $4/39$

24. $5/18$

25. $6/35$

26. $7/24$

27. $8/57$

28. $9/11$

29. $10/13$

30. $7/10$

31. 0.018

32. 0.0032

33. 0.054

34. 0.036

35. 0.36

36. 0.056

37. 0.0048

38. 0.081

39. 0.0018

40. 0.036

41. 0.0025

42. 0.0018

43. 0.0015

44. 0.018

45. 0.0042

46. 0.42

47. 0.048

48. 0.0054

49. 0.024

50. 0.036

51. 225

52. 625

53. 1225

54. 2025

55. 3025

56. 4225

57. 5625

58. 7225

59. 9025

60. 11025

61.
$$\begin{array}{r} 1\frac{1}{4} \\ - \frac{3}{4} \\ \hline \end{array} = \frac{1}{4} + \frac{1}{4} = \frac{1}{2}$$

62.
$$\begin{array}{r} 3\frac{9}{15} \\ + 2\frac{1}{15} \\ \hline \end{array} = 5\frac{10}{15} = 5\frac{2}{3}$$

63.
$$\begin{array}{r} \frac{12}{15} \\ + \frac{8}{15} \\ \hline \end{array} = \frac{20}{15} = \frac{5}{3} = 1\frac{2}{3}$$

64.
$$\begin{array}{r} 2\frac{5}{16} \\ + \frac{6}{16} \\ \hline \end{array} = 2\frac{11}{16}$$

65.
$$\begin{array}{r} 30\frac{14}{24} \\ - 20\frac{9}{24} \\ \hline \end{array} = 10\frac{5}{24}$$

66.
$$\begin{array}{r} \frac{15}{25} \\ - \frac{7}{25} \\ \hline \end{array} = \frac{8}{25}$$

MAP 255 (T2) Issue 12

$$67. \quad \begin{array}{r} \frac{9}{30} \\ + \frac{25}{30} \\ \hline \end{array} = \frac{34}{30} = \frac{17}{15} = 1\frac{2}{15}$$

$$68. \quad \begin{array}{r} 2\frac{3}{6} \\ - 1\frac{1}{6} \\ \hline \end{array} = 1\frac{1}{3}$$

$$69. \quad \begin{array}{r} 2\frac{6}{8} \\ - 1\frac{1}{8} \\ \hline \end{array} = 2\frac{5}{8}$$

$$70. \quad \begin{array}{r} \frac{8}{12} \\ - \frac{5}{12} \\ \hline \end{array} = \frac{3}{12} = \frac{1}{4}$$

$$71. \quad \begin{array}{r} \frac{11}{18} \\ + \frac{6}{18} \\ \hline \end{array} = \frac{17}{18}$$

$$72. \quad \begin{array}{r} \frac{29}{35} \\ - \frac{14}{35} \\ \hline \end{array} = \frac{15}{35} = \frac{3}{7}$$

$$73. \quad \begin{array}{r} \frac{21}{30} \\ + \frac{5}{30} \\ \hline \end{array} = \frac{26}{30} = \frac{13}{15}$$

$$74. \quad \begin{array}{r} \frac{9}{24} \\ + \frac{4}{24} \\ \hline \end{array} = \frac{13}{24}$$

$$75. \quad \begin{array}{r} 1\frac{7}{12} \\ - \frac{7}{8} \\ \hline \end{array} = \frac{7}{12} = \frac{14}{24} = \frac{17}{24}$$

$$76. \quad \begin{array}{r} \frac{5}{24} \\ + \frac{16}{24} \\ \hline \end{array} = \frac{21}{24} = \frac{7}{8}$$

$$77. \quad \begin{array}{r} \frac{12}{16} \\ - \frac{5}{16} \\ \hline \end{array} = \frac{7}{16}$$

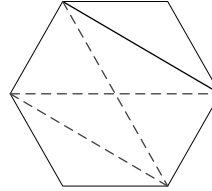
$$78. \quad \begin{array}{r} \frac{2}{12} \\ + \frac{3}{12} \\ \hline \end{array} = \frac{5}{12}$$

$$79. \quad \begin{array}{r} \frac{7}{40} \\ + \frac{32}{40} \\ \hline \end{array} = \frac{39}{40}$$

$$80. \quad \frac{5+12}{18} = \frac{17}{18}$$

$$81. \quad 3 \times 500 + 2(200 + 400) = \boxed{2700}$$

82. 5 times



$$83. \quad \begin{aligned} \text{The total spread} &= 16x \\ 4x &= \frac{1}{4}(16x) = \frac{1}{4}(20) = \boxed{5} \end{aligned}$$

84. 32

$$85. \quad 31 + 3 \times 3 = 40$$

86. Each one contributes, say \$1.00.
The total is \$4.00.

Now, $\$4 \div 10 = \0.4 , which is $\boxed{60\%}$ less.

$$87. \quad \text{Avg}(10, 30, 20, 40, 50, 60) = 35^\circ$$

$$88. \quad 3 + 5 + 5 = 13$$



89. Perimeter = 8 times

Side = 8 times

$$\text{area} = 8^2 = \boxed{64}$$

90. 18 of them.

Bundle all adjacent boys into 1 boy.

Bundle all adjacent girls into 1 girl.

After the transformation, there are only 18 boys and 18 girls without two adjacent boys or girls. In other words, every two boys will be separated by a girl, and vice versa. 18 boys give their right hand to a girl, so 18 boys must also give their left hands to a girl.