Answer Key

1. $\frac{4}{7}$
2. $\frac{5}{8}$
3. $\frac{4}{7}$
4. $\frac{3}{6}$
5. $\frac{3}{5}$
6. $\frac{4}{6}$
7. $\frac{2}{4}$
8. $\frac{2}{4}$
9. $\frac{4}{6}$
10. $\frac{5}{7}$
11. 4
12. 12
13. 10
14. 20
15. 12
16. 12
17. 27
18. 27
19. 20
20. 25
21. 78.549
22. 10.6
23. 0.416
24. 96.494
25. 3.328
26. 41.55
27. 5.421
28. 32.85
29. 7.99
30. 69.76
31. 18
32. 43
33. 49
34. 27
35. 46
36. 39
37. 17
38. 10
39. 26
40. 19
41. 5
42. 5
43. 6
44. 7
45. 7
46. 4
47. 8
48. 5
49. 20
50. 16
51. 0
52. 101
53. 6÷2 = 3
    3×5 = 15 lb
54. 165÷15 = 11 hours
55. 6×35 = 210
    210 - 13 = 197
56. 5 - 1.20 = $3.80
57. 2400÷12 = $200
58. 9:00 - 0:25 = 8:35 A.M.
59. 15 + 25 = 40
    3:40 + 0:40 = 4:20 P.M.
60. 30 (of Jul)
61. 3×24 + 9 = 81
62. (a) 2 candies 3rd witch
    (b) 5 candies 2nd witch
    (c) 10 candies 1st witch
63. 6×2 = 12
    28 - 12 = 16
    16÷4 = 4 donkeys
64. 39 - 10 + 1 = 30
65. (a) 9:20 – 0:40 = 8:40 P.M.
    (b) 9:20 – 2:50 = 6:30 P.M.
66. C
67. (a) 20×20 = 400 sq. inches
    (b) 4×20 = 80 inches
68. 10 ÷ 2 = 5
    82 + 5 = 87
69. (a) 3.20 - 2.00 = $1.20 (each pencil)
    (b) 2.00 - 1.20 = $0.80 (each eraser)
70. (a) pencil = $1.30
    (b) eraser = $0.65

MAP 230 (T1) Issue 9

71. 72 - 8 = 64
    64 - 8 = 56
    …
    40 - 8 = <u>32</u>
72. 1 - $\frac{1}{4}$ - $\frac{1}{4}$ = $\frac{1}{2}$ = 1/2
73. 2002 - 1957 = <u>45</u>
74. $\frac{2}{3}$×12 = <u>8 inches</u>
75. 1994 - 350 = 1644
76. 36÷4 =9
    9×9 = 81 in^2
77. $3\frac{1}{2}$ + $1\frac{1}{2}$ = 5 hours
78. 14.25 - 9.75 = <u>$4.50</u>
79. 3.5×8 = <u>$28</u>
80. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ (Divide by two)
    Ans = 1/2 &1/4 & 1/8
81. 20÷2 = 10
    4÷2 = 2
    10 + 2 = <u>12</u>
82. 200÷10 = 20
83. 5×6.2 = $31
84. 28÷4 = 7 (drivers)
    28 + 7 = 35
85. 6×6 = 36
86. $\frac{4}{24}$= $\frac{1}{6}$ = 1/6
87. 10÷2 = 5
    5×7 = 35 min
88. 31 + 28 + 31 = 90
    90÷3 = 30
89. 14×4 = 56 yrs old
90. 7 dimes & 3 quarters

Answer Key

1. .005, .0005
2. .006, .0006
3. .007, .0007
4. .008, .0008
5. .009, .0009
6. .5, 5
7. .6, 6
8. .7, 7
9. .8, 8
10. .9, 9
11. 0.08
12. 0.01
13. 0.004
14. 0.049
15. 0.0024
16. 0.001
17. 0.009
18. 0.06
19. 0.24
20. 0.002
21. 0.048
22. 0.004
23. 0.0045
24. 0.28
25. 0.003
26. 180 – 95 = 85
27. 8× 7 = 56
28. (a) 3×2 = 6
    (b) 3×3 = 9
    (c) 4×3 = 12
29. (a) 60×(5/6) = 50
    (b) 60×(5/6) = 50
30. 20.00 – 3×4.00 = 8
31. (19+21)/2 = 20
32. D
33. (a) 56/8 = 7
    (b) 36/9 = 4
34. (a) 38 (b) 54 (c) J
35. (a) 42×(6/7) = 36
    (b) 42×(1 – 6/7) = 6
36. 90 – 63 = 27
37. 2×12/6 = 4
38. (a) 9+2+4 = 15
    (b) 9×2×4 = 72
39. $42 \times \frac{3}{7} = 18$
40. 70×2 = 140
41. 150
42. ☐ = 7
43. ☐ = 6
44. $\frac{1}{3}=\frac{5}{15}$
    1×15 + 5 = 20
45. ☐ = 80
46. 12
47. 13
48. $\frac{5}{6}$ = 5/6
49. $\frac{2}{3}$ = 2/3
50. 50
51. 3×12÷2 = 18 inches
52. 10 + 20 = 30
    20 + 30 = 50
53. 21 ÷ 0.3 = 70
54. 27 ÷ 3 = 9 yd
55. 6×4×2.25 = $54
56. 24 – 6 = 18
    18 ÷ 2 = 9
    9 – 3 = 6 yrs old
57. 3(3 + 5 + 7) = 45
58. 4 *hr* & 50 *min*
59. 5.00 + 4(3.00) = $17.00
60. 23
    3 in (A) & 10 in (B) & 6 in (C) & 4 in (D)
61. 40
62. 4/3
63. 78
64. .008
65. 0.006
66. 0.003
67. 0.4
68. 3
69. 1.4
70. 15%×80 = 0.15×80 =12
71. 22.2
72. 2000 ÷ 0.1 = 20000
73. 10

74. 197
75. 280
76. .4×250 = 100
77. 3.38
78. 2.5
79. 0.07
80. 100
81. A
82. B
83. C
84. D
    7×7 – 6 = 43
85. C
    6×6 = 36
    There are six variations for MNP and six variations for 123.
86. D
87. A
88. D
    2000÷5 = 400
89. B
90. B
91. C
    3 + 2×7 = 17
92. A
93. D
94. C
95. A
    $\frac{1}{10}(198 + 219 + 168 + 95 + 106) = 78.6$

Answer Key

1. 10
2. 4.8
3. 33
4. 10.8
5. 22.5
6. 86.4
7. 75
8. 68
9. 4.5
10. 30
11. $\begin{array}{r} 2\frac{8}{24} \\ -\ \frac{21}{24} \\ \hline \end{array} = \begin{array}{r} 1\frac{8}{24} \\ +\ \frac{3}{24} \\ \hline \end{array} = 1\frac{11}{24}$
12. $\frac{21-1}{35} = \frac{20}{35} = \frac{4}{7}$
13. $\begin{array}{r} \frac{9}{24} \\ +\ \frac{4}{24} \\ \hline \end{array} = \frac{13}{24}$
14. $\begin{array}{r} \frac{28}{60} \\ -\ \frac{21}{60} \\ \hline \end{array} = \frac{7}{60}$
15. $\frac{7}{12} - \frac{3}{8} = \frac{14-9}{24} = \frac{5}{24}$
16. $\begin{array}{r} \frac{21}{60} \\ -\ \frac{2}{60} \\ \hline \end{array} = \frac{19}{60}$
17. $8\frac{7}{8}$
18. $\frac{21}{35} - \frac{11}{35} = \frac{10}{35} = \frac{2}{7}$
19. $\begin{array}{r} 4\frac{1}{24} \\ -\ \frac{21}{24} \\ \hline \end{array} = \begin{array}{r} 3\frac{1}{24} \\ +\ \frac{3}{24} \\ \hline \end{array} = 3\frac{4}{24} = 3\frac{1}{6}$
20. $\begin{array}{r} \frac{8}{30} \\ -\ \frac{5}{30} \\ \hline \end{array} = \frac{3}{30} = \frac{1}{10}$
21. 12
22. .0003
23. .014
24. 0.008
25. 0.68
26. 173.6
27. 675
28. 150
29. 184
30. F
31. 9
32. 25
33. 15000
34. 0.02
35. 1.8
36. 5
37. 4
38. 1/2
39. $\frac{3}{4}\times\frac{5\times4}{4\times3}\times\frac{4\times5}{5\times4}\times\frac{5\times6}{6\times5} = \frac{3}{4} = 3/4$
40. .0006
41. B
42. D
43. A
44. B
45. C
46. B
47. B
48. C
49. B
50. C
51. C
52. D
53. C
54. B
55. D
56. D
57. C
58. A
59. A
60. D
61. $\frac{2}{3}\times 12 + \frac{3}{4}\times 16 = 8 + 12 = 20$
62. 0.027
63. 3
64. $\frac{25}{6}\times\frac{36}{5}\times\frac{4}{3} = \boxed{40}$
65. 49
66. ¼ = 1/4
67. $\frac{7}{2}$ = 3½ = 3 1/2
68. 102 – 11 = 91 = 7×$\boxed{13}$
    Ans = 13
69. 2¾=2.75 = 275%

70. 43.6 - 40 = $3.60
    3.6÷40 = 0.09 = 9%
71. 800÷(20×10) = 4 in
72. 85×4 = 340
    88×5 = 440
    440 – 340 = 100
73. 50÷2 – 10 = 15 (length)
    15×10 = 150 in^2
74. 5 + 4×½ = 7 ft^2
75. 1 square yard = 9 square feet
    3×9 = 27
76. 27.322
77. 12÷1½ = 12÷$\frac{3}{2}$ = 8
    8 + 1 = 9
78. 25 (percent)
79. 5×5×52 = 1300 apples
80. 12 + 8 = 20
    20×2 = 40
    40×20×12 = 9600
81. A
82. C
83. B
84. C
85. C
86. B
87. B
88. C
89. D
90. B
91. B
92. C
93. B
94. D
95. D
96. A
97. B
98. C
99. D
100. D

Answer Key

1. III
2. II
3. IV
4. I
5. P =(-5, 0)
6. Q=(0, -3)
7. L_1: $y = -3$
8. L_2: $x = -5$
9. Yes
10. No
11. Yes
12. No
13. Yes
14. No
15. Yes
16. No
17. A
18. A and C
19. B and C
20. A and B
21. –1
22. 5/2
23. –1/5
24. 3
25. 5/7
26. –3/4
27. 8/3
28. $\frac{2}{3}$
29. $-\frac{2}{3}$
    Opposite sign; Symmetry
30. 4
31. –4
    Opposite sign; Symmetry
32. 0
33. B=(5, 2)
34. D=(-3, 8)
35. P=(1, 5)
36. AC=10
37. slope(AC) = 3/4
38. BD = 10
39. slope(BD) = –3/4
40. 1:2
41. $x = -5$
42. 4
43. $x = 4$
44. $x = 2\ 2/3$
45. $x = 2$
46. $x = 1$
47. $n = \frac{5}{3} = 5/3$
48. –12
49. $n = -5$
50. $x = 2$
51. $\frac{3}{4}\times(1 - \frac{2}{3}) = 1/4$
52. 243 – 83 = 160
    160÷80 = 2
    2×37.50 = $75.00
53. 400×15% = 400×0.15 = 4×15 = $60
54. $(6\frac{1}{6}+4\frac{1}{3})\times 12$ = 126 roses
55. $2\frac{1}{2}\times 12$ = 24 + 6 = 30 inches
56. B
    A: 12.60÷30 = 0.42 per pound
    B: 30.12÷80 = 0.38 per pound
57. $\frac{6}{24} = \frac{1}{4}$ = 0.25 = 25%
58. 96÷6 = 16 (miles per gallon)
    240÷16 = 15 gallons
59. D
60. 11 + 22 + 33 = 66
    $\frac{11+33}{66} = \frac{2}{3}$ = 2/3
61. distance = $\frac{2}{3}\times 6$ = 4 miles
    time for biking = $\frac{4}{8} = \frac{1}{2}$ hr = 30 min
62. 136÷16 = 8.5 (lb)
63. 160000
64. 9 + 2 + 2 = 13
65. A
    Shoppers: 1.87÷6 = 0.31…
    Thrift Way: 2.90÷8 = 0.36…
66. (7 to 9) 70 + 101 + 29 = 200
    (10 to 12) 84 + 73 + 118 = 275
    200:275 = 8:11
67. 12÷3 = 4
    42.00×4 = $168
68. $80\times\frac{60}{12}$ = 80×5 = 400 mph
69. 60×5%=60×0.05 = 6×5
    = $3.00
70. 60 + 3 = $63.00
    or
    1 + 5% = 1.05
    60×1.05 = $63
71. B
72. D
73. C
74. A
75. D

76. B
$2\times6 = 12\ yd^2 = 432\ ft^2$

77. B

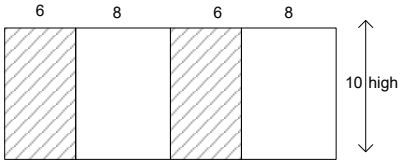
78. D
Mario: $\frac{11}{16} = 0.6875$
Plato: $\frac{10}{15} = 0.6666$
Fred: $\frac{15}{20} = 0.75$
Sam: $\frac{9}{17} = 0.5294$
Karen: $\frac{15}{21} = 0.7142$

79. D
120÷80 = 1.5 hr
2:35 + 1:30 = 4:05

80. C

81. D
$2\times-2 = a - 6$
$a = 2$
$2\times4 = 5 + b$
$b = 3$
$a + b = 5$

82. D
"Unfold" the wall to turn it into a big rectangle, the area of the rectangle is the area of the wall area, which is $2(6+8)\times10 = 280$



83. D
The school time = 90° = ¼ of a day = 6 hr. The rest of the time is 24 – 6 = 18 (hr). Thus, time for other activity = ½(18) = 9 (hr)

84. B
$1\times2\times3\times60 = 360$
1 + 2 + 3 + 60 = 66

85. B
The ratio of boys to girls is 2:3, thus the number of girls is $16\times\frac{3}{2} = 24$.

86. B
$240 = 15\times18$

87. A
900÷300×20 =60 (gallons)

88. B
600÷60 = 10

89. D

90. B

Answer Key

1. slope(AF)= 1/4
2. slope(BG)= 2/3
3. slope(CH)= 3/2
4. slope(DI)= 4
5. slope(EJ)= –4
6. slope(FK)= –3/2
7. slope(GL)= –2/3
8. slope(HM)= –1/4
9. slope(L_1) = 1/3
10. slope(L_2) = 1/2
11. slope(L_3) = 3/2
12. slope(L_4) = 3
13. 1
14. 2
15. $-\frac{2}{3}$
16. –2
17. –2
18. $-\frac{1}{2}$
19. 0
20. $-\frac{1}{2}$
21. slope = 2
22. slope = –1
23. slope = –10
24. slope = 14/9
25. slope = 3/8
26. slope = 1
27. slope = –1
28. C
29. D
30. A
31. B
32. A
33. B
34. 3/2
35. –2/3
36. 1/4
37. $\frac{6}{4} = \frac{3}{2}$
38. $\frac{-5}{8}$
39. 7
40. $\frac{8}{3}$
41. Step I:
    Find the slope of AB first,
    The slope $m = \frac{5-(\_\_)}{-4-(\_\_)} = \frac{5-(-2)}{-4-(1)} = \frac{7}{-5}$
    Step II:
    Write the slope intercept form as
    $y = mx + b$
    Since the slope is $\frac{7}{-5}$, the equation is
    $y = \frac{7}{-5}x + b$
    Step III:
    Solve for b
    Since the line passes through A or B, either point will be fine to plug in. Let's, say, use point A(1, -2). We have
    $(-2) = \frac{7}{-5}(1) + b$
    $b = -2 + \frac{7}{5} = -\frac{3}{5}$
    Step IV:
    Finalize the equation.
    $y = \frac{7}{-5}x - \frac{3}{5}$
    Step V: Double–check with the other point B(-4, 5), which should satisfy the linear equation. Is (5) equal to $\frac{7}{-5}(-4) - \frac{3}{5}$?

    $\frac{7}{-5}(-4) - \frac{3}{5} = \frac{28-3}{5} = 5$
42. $b = 0$
43. $b = 7$
44. $b = -31$
45. No since
    $3(5) \neq 4(-4) + 4$
46. 2
47. $y = 2x + b$
48. $b = 7$ (Use point A)
49. $y = 2x + 7$
50. $2(2) + 7 = 11$ (Check for point B)
51. $y = -7x + 25$
52. $y = \frac{1}{3}x - 3$
53. We have $y = -2x + b$ at beginning. Since it passes through G(-4, -1), we can solve for b.
    $-1 = -2(-4) + b$
    $b = -9$
    Thus, the equation is $y = -2x - 9$
54. They are the same line.
55. $y = 3x - \frac{3}{2}$
56. $y = -1.5x + 3$

57. $y = 3.6x + 4$

58. $y = 3x + 10$

59. $y = \frac{1}{5}x + 0.3$

60. $y = -2x - \frac{3}{2}$

61. 2¼

62. $9\frac{7}{48} = 9\ 7/48$

63. 5

64. -.49

65. $\frac{8}{3} \div \frac{16}{5} \div \frac{5}{3} = \frac{8}{3} \times \frac{5}{16} \times \frac{3}{5}$
= 1/2

66. $3^6 \div 9^2 = 3^6 \div 3^4 = 3^2$
$\square = 2$

67. $\frac{3}{8} = 0.375 = 37.5\%$

68. $x + ¼ = 2x - 4$
$x = 4¼ = 4\ 1/4$

69. $4(x - 1) + 5(x + 2) = 3(x - 8)$
$4x - 4 + 5x + 10 = 3x - 24$
$9x + 6 = 3x - 24$
$6x = -30$
$x = -5$

70. $3x = 20 - 2$
$3x = 18$
$x = 6$

71. The area is 5×12/2=30. There are 4 such right triangles. The area is 30×4 = 120.

72. The figure is a rhombus. Each side has a length of 13. Thus, the perimeter is 13×4 = 52.

73. $\angle BAD + \angle ADC = 180°$
$½(\angle BAD + \angle ADC) = 90°$
$180 - 90 = 90$

74. $x = 20$

75. $60 \div 360 = ⅙$
$⅙ \times 6^2\pi = 6\pi\ cm^2$

76. $x = 58°$ (corresponding angle)
$y = 70°$

77. $(36 \div 2) \times 0.35$
$= 18 \times 0.35$
$= 9 \times 0.7$
$= \$6.30$

78. $1000 \times ½ = 500$
$1000 \times ¼ = 250$
$1000 - 500 - 250 = \$250$

79. $720 \times \frac{3}{8} = 270$
$270 \times ⅙ = 45$

80. $13 - 2x = 8$
$\Rightarrow 2x = 5$
$\Rightarrow x = 2½$

81. A

82. 3000

83. B

84. A

85. \$1236
8 yd × 6 yd × 25.75
$= 4 \times 3 \times (4 \times 25.75)$
$= 12 \times 103$
$= 1236$

86. A

87. $1\frac{1}{8}$

88. B

89. B

90. A

91. C

92. D

93. B

94. B

95. D

96. B

97. A

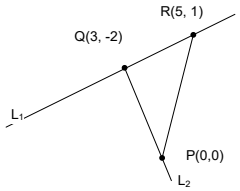
98. B

99. A

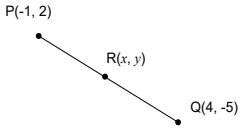
100. A

Answer Key

1. slope = 3, $y = 3x - 1$
2. D(4, -0.5)
   Midpoint formula
   D = $(\frac{2+6}{2}, \frac{1+(-2)}{2})$ = (4, -0.5)
3. E(0.5, -1)
4. F(2.5, -2.5)
5. Yes
   since slope(CF)×slope(AB) = –1
6. No since slope(AD)×slope(BC) ≠ –1
7. Change the standard form into slope intercept form we have $y = -2x + 4$ The slope is –2.
8. $y = -2x + 4$
9. $y = \frac{1}{2}x + \frac{3}{2}$
10. D(2, 0)
11. $x - 5y = 2$
12. $5x + y = 10$
13. $\frac{15}{4}$
14. $y = 6x - 17$
15. $y + 11 = -2(x-2)$
    $y = -2x - 7$
16. $y + 4 = 3(x-3)$
    $y = 3x - 13$
17. $y = \frac{5}{3}x + 1$
    The intercept form is
    $\frac{x}{-3} + \frac{y}{5} = 1$,
    which is equivalent to
    $\frac{y}{5} = \frac{x}{3} + 1$.
    Thus,
    $y = \frac{5}{3}x + 1$ (the slope–intercept form)
18. The intercept form is
    $\frac{x}{-8} + \frac{y}{12} = 1$
    x–intercept = –8 and y–intercept = 12. The area described = $\frac{1}{2}\times 8\times 12 = 48$
19. 13
20. 17
21. $3x - 2y = 0$
22. Solving the system of linear equations
    $3x - 2y = 1$
    $2x + 3y = 0$
    we find the intersection is Q(3, -2).
23. The distance between P and Q = $\sqrt{13}$
24. What is the length of QR? It is
    $\sqrt{(5-3)^2 + (1-(-2))^2} = \sqrt{13}$.
    The area of the right triangle =
    $\frac{1}{2} \times \sqrt{13} \times \sqrt{13} = 6.5$



25. The slope = $\frac{-5-2}{4-(-1)} = \frac{-7}{5}$.



26. Since the slope is $\frac{-7}{5}$ and the line passes through P, thus we have the point–slope form:
    $y - 2 = \frac{-7}{5}(x + 1)$
27. By rearranging the point–slope form, we can obtain the slope–intercept form,
    $y = \frac{-7}{5}x + \frac{3}{5}$.
    Alternative (slope–intercept form):
    $y = -\frac{7}{5}x + b$
    Since the line passes through P and Q ⇒ Let's choose P(-1, 2) to satisfy the equation:
    $2 = \frac{-7}{5}\times -1 + b$
    $b = \frac{3}{5}$
28. Parallel
29. Parallel
30. Perpendicular
31. Neither
32. Neither
33. Perpendicular
34. $m(3) - (-5) + 10 = 0$
    $3m + 15 = 0$
    $m = -5$
35. The y–intercept is where the line meet $x = 0$, thus we have
    $-4y = 60$
    $y = -15$.
    Similarly, x–intercept is 20.

36. No. Since AB has the slope of 2 ($y = 2x$) while AC or BC has different slope.
37. Parallel since they have the same slope.
38. Yes
    s
    The slope of AB = –4. The slope of BC=$\frac{1}{4}$. Thus, AB⊥BC.
39. 34
    The area of ΔABC is $\frac{1}{2}$×4×17 = 34.
40. By using slope–intercept form, we have $y = –3x + 5$, which does not pass through (-15, 0).
41. $a = 4$, $b = 20$
42. Yes
43. False
44. No
45. No
46. They are collinear since slope(ST) = 3, and slope(TU) = 3
47. They are not collinear since slope(XY) = 3, while slope(YZ) = –7
48. Since they are collinear, we have
    slope(AC) = slope(AB)
    $\frac{6-(-4)}{5-3} = \frac{3.5-(-4)}{a-3}$
    $\frac{10}{2}$=5= $\frac{7.5}{a-3}$
    $a – 3 = 1.5 \Rightarrow a = 4.5$
49. For the value of a,
    $\frac{-7-(-9)}{2-10} = \frac{-5-(-9)}{a-10}$
    $\frac{2}{-8}$=$-\frac{1}{4} = \frac{4}{a-10}$
    $a – 10 = –16 \Rightarrow a = –6$
    For the value of b,
    $\frac{6-(-3)}{4-1} = \frac{b-(6)}{5-4}$
    $3 = b – 6 \Rightarrow b = 9$
50. According to the above theorem, the perpendicular line must be
    $2x + 3y + d$
    Since it passes through (2, -5), it leads to the equation:
    $2(2) + 3(-5) + d = 0$
    $d = 11$
    Thus, the line passes through (2, -5) and parallel to L is $2x + 3y + 11 = 0$.
51. The line must be
    $3x – 2y + f = 0$
    Since it must pass through (2, -5), we have
    $3(2) –2(-5) + f = 0$
    $6 + f = 0$
    $f = –16$
    Thus, the line is $3x –2y – 16 = 0$.
52. The slope is $\frac{4}{5}$. Thus, the equation is
    $y = \frac{4}{5}x + b$
    Since it passes through P(-2, 3), we have
    $3 = \frac{4}{5}(-2) + b$
    $b = \frac{23}{5}$
    Thus, the line is $4x – 5y + 23 = 0$.
    Double–check: Does the line pass through (3, 7)?
    $4(3) –5(7) + 23 = 0$
    Yes, indeed it passes through the other point.
    Thus, the equation of the line is
    $4x – 5y + 23 = 0$
53. $y = 4.5x + 2$
54. $y = -1.6x – 9.6$
55. $y = 0.5x + 2$
56. $y = \frac{5}{3}x + 9$
57. $y = -2x + \frac{1}{3}$
58. $y = -0.6x$
59. $y = -x – 2$
60. $y = 0.5x – 2$
61. $y = -5x + 6$
62. $y = 0.5x + 1.75$
63. Y = -2X – 2
64. Y = -5X – 8
65. Y = 2X + 6
66. Y = -X – 1
67. Y = -9/5X + 4
68. (1, 3)
69. (-1, 1)
70. (4, -1)
71. (46, 19)
72. (3/2, -1)