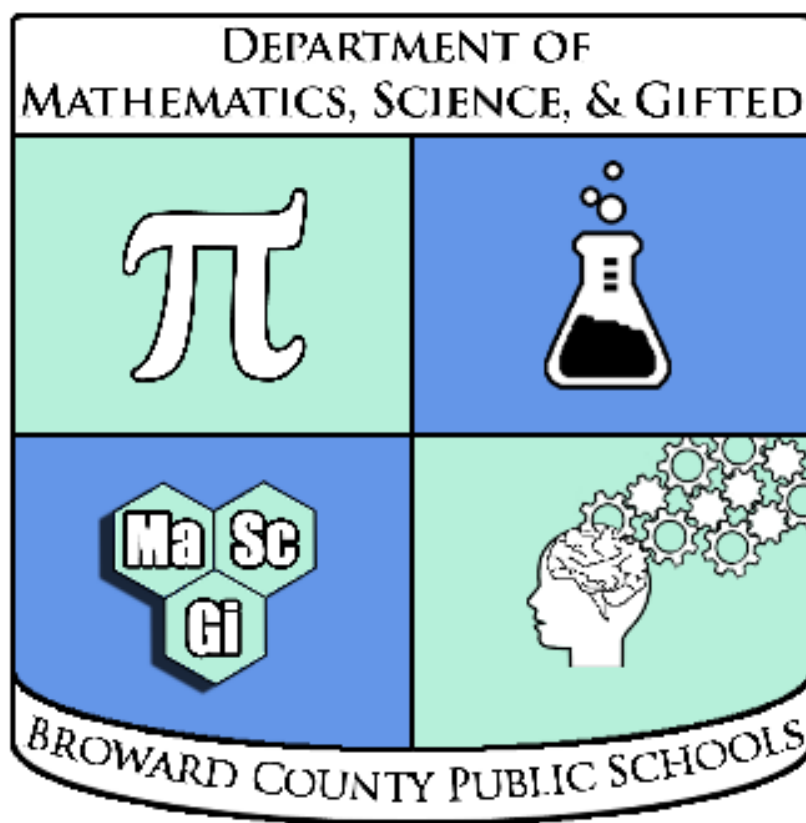


Name: _____

EOC FSA

Warm-ups Key



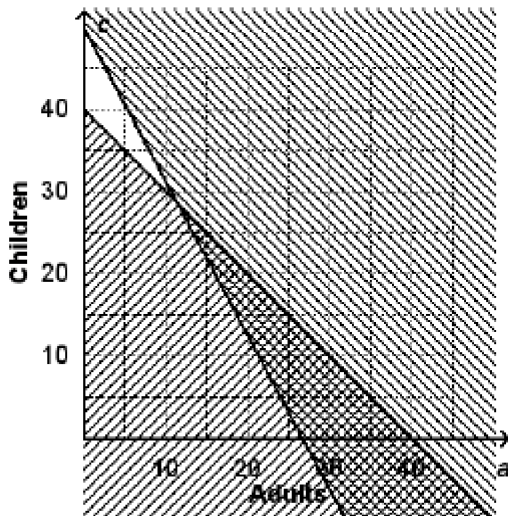
Algebra 1

Compiled by the Broward County Public Schools
Office of Instruction and Intervention
Mathematics, Science, & Gifted Department

**Algebra 1 Warm-Ups
Answer Section**

- 1. ANS: A, B, D LOC: MAFS.912.F-BF.2.3
- 2. ANS: C LOC: MAFS.912.F-IF.2.5
- 3. ANS: D LOC: MAFS.912.S-ID.3.9
- 4. ANS:

$$\begin{cases} a + c \leq 40 \\ 15a + 8c \geq 400 \end{cases}$$



LOC: MAFS.912.A-REI.4.12

5. ANS:

$$\frac{7\left(-4 - \frac{8}{3}x\right)}{-5} = 28$$

$$7\left(-4 - \frac{8}{3}x\right) = -5 \cdot 28$$

$$7\left(-4 - \frac{8}{3}x\right) = -140$$

$$-4 - \frac{8}{3}x = \frac{-140}{7}$$

$$-4 - \frac{8}{3}x = -20$$

$$-\frac{8}{3}x = -20 + 4$$

$$-\frac{8}{3}x = -16$$

$$x = -\frac{3}{8} \cdot -16$$

$$x = 6$$

LOC: MAFS.912.A-REI.2.3

6. ANS: B, D, F, H LOC: MAFS.912.F-IF.1.2

7. ANS: A LOC: MAFS.912.N-RN.1.1

8. ANS: A, E, F LOC: MAFS912.S-ID.3.8

9. ANS: A, D LOC: MAFS.912.A-CED.1.4

10. ANS:

a.	$f(x) = x + 2$		No
b.	$f(x) = 2x$	Yes	
c.	$f(x) = \frac{x}{2}$		No
d.	$f(x) = x^2$	Yes	
e.	$f(x) = 2^x$		No

LOC: MAFS.912.F-IF.2.6

11. ANS: D LOC: MAFS.912.S-ID.2.6

12. ANS:

$$f(x) = 3x - 6$$

$$y = 3x - 6$$

$$y + 6 = 3x$$

$$\frac{y+6}{3} = x$$

$$\frac{1}{3}y + 2 = x$$

$$\frac{1}{3}x + 2 = y$$

$$g(x) = \frac{1}{3}x + 2$$

LOC: MAFS.912.F-IF.2.4

13. ANS: C, E LOC: MAFS.912.A-APR.1.1

14. ANS: B, C LOC: MAFS.912.A-CED.1.1

15. ANS:

	Yes	No
a. $(5x + 10) + (x - 100)$	X	
b. $\left(\frac{11}{4}x - 2\right) - \left(8x - \frac{13}{2}\right)$		X
c. $(4x - 3.2)(x + 0.5)$		X
d. $\left(-3x + 4\sqrt{5}\right) - \left(-2x - \sqrt{13}\right)$		X
e. $(-1.7x - 4.2) + \left(\frac{20x}{7} - \sqrt{7}\right)$	X	

LOC: MAFS.912.A-APR.1.1

16. ANS: B LOC: MAFS.912.F-BF.1.1

17. ANS: C LOC: MAFS.912.F-IF.1.2

18. ANS: A, B LOC: MAFS.912.A-REI.3.6

19. ANS:

$$\begin{aligned} f(x) + g(x) &= (x^2 + x - 6) + (x^2 - 4) \\ &= 2x^2 + x - 10 \end{aligned}$$

$$\begin{aligned} f(x) - g(x) &= (x^2 + x - 6) - (x^2 - 4) \\ &= x^2 + x - 6 - x^2 + 4 \\ &= x - 2 \end{aligned}$$

LOC: MAFS.912.F-BF.1.1

20. ANS:

Let t be the time in hours that Gwendolyn spends reading.

$$130 + 45t = 400$$

$$130 + 45t - 130 = 400 - 130$$

$$45t = 270$$

$$\frac{45t}{45} = \frac{270}{45}$$

$$t = 6$$

Gwendolyn needs 6 hours to finish the book.

LOC: MAFS.912.A-REI.2.3

21. ANS: A, C, E LOC: MAFS.912.S-ID.2.6

22. ANS: D LOC: MAFS.912.A-CED.1.3

23. ANS: C LOC: MAFS.912.A-CED.1.1

24. ANS:

$$f(-2) = 13(-2) - (-2)^2 = -26 - 4 = -30$$

$$f(-1) = 13(-1) - (-1)^2 = -13 - 1 = -14$$

$$f(0) = 13(0) - 0^2 = 0 - 0 = 0$$

$$f(1) = 13(1) - 1^2 = 13 - 1 = 12$$

$$f(2) = 13(2) - 2^2 = 26 - 4 = 22$$

The range of the function is $\{-30, -14, 0, 12, 22\}$

LOC: MAFS.912.F-IF.1.2

25. ANS: A LOC: MAFS.912.N-Q.1.1

26. ANS: F LOC: MAFS.912.N-Q.1.1

27. ANS: B LOC: MAFS.912.N-Q.1.1

28. ANS: C LOC: MAFS.912.N-Q.1.1

29. ANS: E LOC: MAFS.912.N-Q.1.1

30. ANS: A, D, F LOC: MAFS.912.A-REI.4.12

31. ANS: C LOC: MAFS.912.F-BF.2.3
 32. ANS: A LOC: MAFS.912.A-REI.3.5
 33. ANS: A, E LOC: MAFS.912.N-RN.1.2
 34. ANS:
 The point on the origin represents purchasing 0 muffins for \$0.00.

LOC: MAFS.912.N-Q.1.1

35. ANS: B LOC: MAFS.912.A-APR.1.1
 36. ANS: B LOC: MAFS.912.S-ID.1.3
 37. ANS: C, E LOC: MAFS.912.S-ID.3.9
 38. ANS: B LOC: MAFS.912.F-IF.1.1
 39. ANS:

	Rational	Irrational
a. The product of $\sqrt{2}$ and 5		X
b. $f(x) = x^2 + 2$ evaluated at $x = \sqrt{7}$	X	
c. The sum of $\sqrt{10}$ and $\sqrt{16}$		X
d. $f(r) = \pi r^2$ evaluated at $r = 3$		X

LOC: MAFS.912.N-RN.2.3

40. ANS: D LOC: MAFS.912.N-RN.1.2
 41. ANS: C LOC: MAFS.912.A-REI.4.11
 42. ANS: C LOC: MAFS.912.S-ID.1.1
 43. ANS: D
 44. ANS:
 (5, -2)

LOC: MAFS.912.A-REI.3.5

45. ANS: F LOC: MAFS.912.A-CED.1.4
 46. ANS: A LOC: MAFS.912.A-CED.1.4
 47. ANS: C LOC: MAFS.912.A-CED.1.4
 48. ANS:

$250 - 5(a - 1)$ is the price they can charge per ad for a ads. For one ad, they can charge $250 - 5(1 - 1) = 250 - 5(0) = \250 , for two ads, they can charge $250 - 5(2 - 1) = 5(2 - 1) = 250 - 5 = \245 , and so one, which matches the pattern they found in their market research.

LOC: MAFS.912.A-SSE.1.1

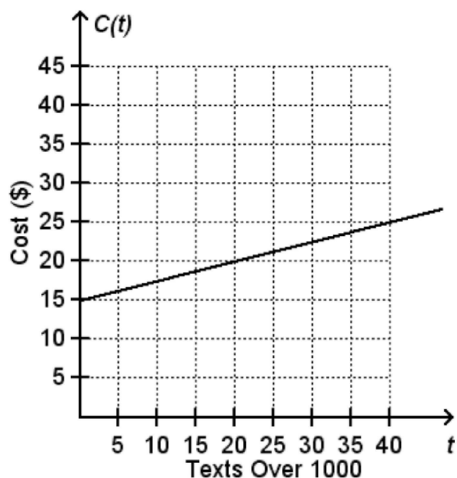
49. ANS: A, B, D, F LOC: MAFS.912.A-SSE.1.2
 50. ANS: C, E, F LOC: MAFS.912.N-RN.1.1

51. ANS:

No. The sum of two quadratic polynomials $ax^2 + bx + c$ and $mx^2 + nx + p$, where $a, b, c, m, n,$ and p are real numbers, $a \neq 0$, and $m \neq 0$, is $(a + m)x^2 + (b + n)x + (c + p)$. If $a + m = 0$, the simplified form of the sum will be $(b + n)x + (c + p)$, which does not have an x^2 term.

LOC: MAFS.912.A-APR.1.1

52. ANS:



The $C(t)$ -intercept is \$15, which is the cost for sending up to 1000 texts.

LOC: MAFS.912.F-IF.2.4

53. ANS: D LOC: MAFS.912.A-REI.3.6

54. ANS: C LOC: MAFS.912.S-ID.3.7

55. ANS:

	Yes	No
a. $c \geq 20$	X	
b. $t < 20$		X
c. $c + t \geq 100$		X
d. $c + t \leq 100$	X	
e. $100 - c \geq 80$		X

LOC: MAFS.912.A-CED.1.3

56. ANS: B LOC: MAFS.912.S-ID.1.2

57. ANS: B LOC: MAFS.912.F-LE.1.1

58. ANS: B, F, G LOC: MAFS.912.A-SSE.1.1

59. ANS: D LOC: MAFS.912.A-REI.1.1

60. ANS:

The expression $(5 - \sqrt{2})(10 + \sqrt{8})$ is rational.

$$\begin{aligned} (5 - \sqrt{2})(10 + \sqrt{8}) &= (5 - \sqrt{2})(10 + \sqrt{4 \cdot 2}) \\ &= (5 - \sqrt{2})(10 + \sqrt{4} \cdot \sqrt{2}) \\ &= (5 - \sqrt{2})(10 + 2\sqrt{2}) \\ &= 50 + 10\sqrt{2} - 10\sqrt{2} - 4 \\ &= 46 \end{aligned}$$

46 is a rational number.

LOC: MAFS.912.N-RN.2.3

61. ANS: B LOC: MAFS.912.F-BF.1.1
 62. ANS: D LOC: MAFS.912.F-IF.2.5
 63. ANS: B LOC: MAFS.912.S-ID.3.8
 64. ANS: B, C LOC: MAFS.912.F-LE.1.2
 65. ANS:

	Decreases	No Change	Increases
a. Mean	X		
b. Median		X	
c. Standard deviation	X		
d. Interquartile range		X	
e. Range	X		

LOC: MAFS.912.S-ID.1.3

66. ANS: C LOC: MAFS.912.A-SSE.1.1
 67. ANS: C, D LOC: MAFS.912.N-RN.2.3
 68. ANS: A LOC: MAFS.912.S-ID.3.7
 69. ANS:

$$P = \frac{8.4Y + 330T + 100C - 200I}{A}$$

$$PA = 8.4Y + 330T + 100C - 200I$$

$$100C = PA + 200I - 8.4Y - 330T$$

$$C = \frac{PA + 200I - 8.4Y - 330T}{100}$$

LOC: MAFS.912.A-CED.1.4

70. ANS: D LOC: MAFS.912.N-Q.1.1

71. ANS:

$$\begin{aligned}
 (c^{-9}d^{12})^{-\frac{5}{6}} &= (c^{-9})^{-\frac{5}{6}}(d^{12})^{-\frac{5}{6}} \\
 &= c^{-9\left(-\frac{5}{6}\right)}d^{12\left(-\frac{5}{6}\right)} \\
 &= c^{\frac{15}{2}} \cdot d^{-10} \\
 &= \frac{c^{\frac{15}{2}}}{d^{10}}
 \end{aligned}$$

LOC: MAFS.912.N-RN.1.2

72. ANS: C LOC: MAFS.912.F-IF.2.4

73. ANS: A LOC: MAFS.912.N-Q.1.2

74. ANS: C LOC: MAFS.912.S-ID.1.2

75. ANS: B, C, E LOC: MAFS.912.S-ID.3.7

76. ANS: B LOC: MAFS.912.F-IF.3.7

77. ANS:

$$\begin{aligned}
 f(x) &= 4x^2 + 4x - 15 \\
 &= 4x^2 + 10x - 6x - 15 \\
 &= 2x(2x + 5) - 3(2x + 5) \\
 &= (2x - 3)(2x + 5)
 \end{aligned}$$

The zeros of the function are $x = \frac{3}{2}$ and $x = -\frac{5}{2}$.

LOC: MAFS.912.F-IF.3.8

78. ANS: B, D LOC: MAFS.912.A-SSE.2.3

79. ANS:

$$A(t) = 300t + 1500$$

$$B(t) = 1500(1.15)^t$$

LOC: MAFS.912.F-LE.1.3

80. ANS: B LOC: MAFS.912.N-Q.1.2

81. ANS:

$$-16t^2 + 24t + 5 = 0$$

$$-16\left(t^2 - \frac{3}{2}t\right) + 5 = 0$$

$$-16\left(t^2 - \frac{3}{2}t + \frac{9}{16}\right) + 5 + 9 = 0$$

$$-16\left(t - \frac{3}{4}\right)^2 + 14 = 0$$

The ball's maximum height is 14 feet, which it reaches in $\frac{3}{4}$ second. The ball would not land on the roof of a 20-foot-tall building.

LOC: MAFS.912.A-SSE.2.3

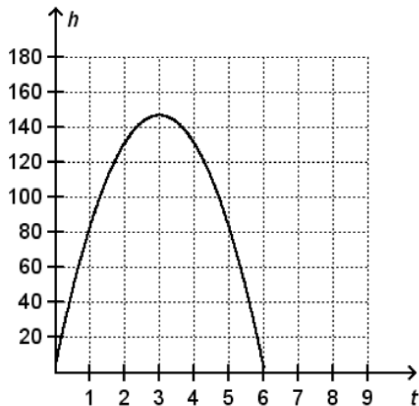
82. ANS: A LOC: MAFS.912.F-IF.3.7

83. ANS: A, C, D, F LOC: MAFS.912.A-APR.2.3

84. ANS:

$$h = -16t^2 + 96t + 3$$

Possible graph:



$$-16t^2 + 96t + 3 = 0$$

$$-16(t^2 + 6t) + 3 = 0$$

$$-16(t^2 + 6t + 9) + 3 + 144 = 0$$

$$-16(t - 3)^2 + 147 = 0$$

The maximum height of the ball is 147 feet.

LOC: MAFS.912.A-CED.1.2

85. ANS:

$$4x^2 - 16x - 21 = 12$$

$$4x^2 - 16x = 33$$

$$x^2 - 4x = \frac{33}{4}$$

$$x^2 - 4x + 4 = \frac{33}{4} + 4$$

$$(x - 2)^2 = \frac{33}{4} + \frac{16}{4}$$

$$(x - 2)^2 = \frac{49}{4}$$

LOC: MAFS.912.A-REI.2.4

86. ANS:

$$550h \geq 5000$$

No; the total number of hours Denise can run in a week is $0.5 \cdot 5 + 2 \cdot 1 = 4.5$ hours. Substitute 4.5 for h :

$$550h \geq 5000$$

$$550(4.5) \geq 5000$$

$$2475 \geq 5000$$

The inequality is not true, so Denise cannot meet her goal.

LOC: MAFS.912.A-CED.1.3

87. ANS: B, E

LOC: MAFS.912.A-SSE.1.2

88. ANS: D

LOC: MAFS.912.F-BF.1.2

89. ANS: C

LOC: MAFS.912.F-LE.2.5

90. ANS: B, E

LOC: MAFS.912.A-SSE.1.3

91. ANS: C

LOC: MAFS.912.F-IF.2.5

92. ANS:

		Zero	One	Infinitely Many
a.	$\begin{cases} 2x - y = 1 \\ x + 5y = 6 \end{cases}$		X	
b.	$\begin{cases} 2x + 3y = 12 \\ 4x + 6y = 24 \end{cases}$			X
c.	$\begin{cases} -x + 4y = -17 \\ 2x - 3y = 6 \end{cases}$		X	
d.	$\begin{cases} 5x + 8y = 6 \\ -3x - 4y = -4 \end{cases}$		X	
e.	$\begin{cases} 4x - 6y = 15 \\ -6x + 9y = 12 \end{cases}$	X		

LOC: MAFS.912.A-REI.3.6

93. ANS: A LOC: MAFS.912.F-LE.2.5

94. ANS: B LOC: MAFS.912.F-IF.3.8

95. ANS: C LOC: MAFS.912.S-ID.2.6

96. ANS: C LOC: MAFS.912.F-IF.2.6

97. ANS: C LOC: MAFS.912.F-LE.1.3

98. ANS:

Yes. The graph of an equation is the set of all its solutions plotted in the coordinate plane. The graph of this equation would pass through the point (13, 9), so (13, 9) must be a solution of the equation.

LOC: MAFS.912.A-REI.4.10

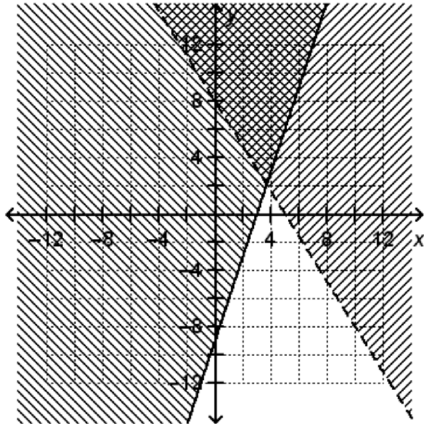
99. ANS: B, C, E LOC: MAFS.912.S-ID.2.5

100. ANS: A, C LOC: MAFS.912.F-IF.1.3

101. ANS: B, D LOC: MAFS.912.A-REI.1.3

102. ANS: C LOC: MAFS.912.F-IF.3.9

103. ANS:



LOC: MAFS.912.A-REI.4.12

104. ANS:

$$\begin{aligned} \sqrt[3n]{a^{2m}} &= \sqrt[3(4m)]{a^{2m}} \\ &= \sqrt[12m]{a^{2m}} \\ &= a^{\frac{2m}{12m}} \\ &= a^{\frac{1}{6}} \end{aligned}$$

LOC: MAFS.912.N-RN.1.1

105. ANS: B LOC: MAFS.912.S-ID.1.4

106. ANS: C LOC: MAFS.912.N-Q.1.2

107. ANS: B, D, F, G LOC: MAFS.912.F-IF.1.1

108. ANS: A, C LOC: MAFS.912.S-ID.1.4

109. ANS: A, C, E, F, H LOC: MAFS.912.F-IF.3.8

111. ANS: B LOC: MAFS.912.F-BF.2.4

112. ANS: A LOC: MAFS.912.S-ID.2.5

110. ANS: C, D LOC: MAFS.912.A-REI.3.5

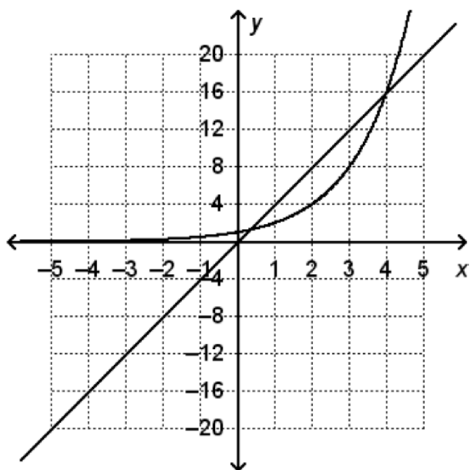
119. ANS: B, E, F LOC: MAFS.912.A-SSE.1.3

120. ANS:

Bryce mixed up the line representing $-4x + y = -2$ with the line representing $2x + y = 2$.

LOC: MAFS.912.A-REI.4.10

121. ANS:



Possible answer: The solutions of the equation $2^x = 4x$ are approximately $x = 0.3$ and $x = 4$.

LOC: MAFS.912.A-REI.4.11

113. ANS: B LOC: MAFS.912.F-IF.1.3

114. ANS: E LOC: MAFS.912.F-IF.1.3

115. ANS: A LOC: MAFS.912.F-IF.1.3

116. ANS: F LOC: MAFS.912.F-IF.1.3

117. ANS: D LOC: MAFS.912.F-IF.1.3

118. ANS:

First Shift: $\frac{2}{50} = 0.04$

Second Shift: $\frac{1}{50} = 0.02$

Third Shift: $\frac{9}{50} = 0.18$

LOC: MAFS.912.S-ID.2.5