Algebra 2 Review Assignment

1. $10+16\div4+8$
$10+4+8$
$14+8$
$\boxed{22}$

2. $4(3+3^2)$
$4(3+9)$
$4(12)$
$\boxed{48}$

3. $4+2^2-15+4$
$4+4-15+4$
$8-15+4$
$-7+4$
$\boxed{-3}$

4. $\frac{14(8-15)}{2}$
$\frac{14(-7)}{2}$
$\frac{-98}{2}$
$\boxed{-49}$

5. $7-[4+(6\cdot5)]$
$7-[4+30]$
$7-34$
$\boxed{-27}$

6. $[21-(9-2)]\div2$
$[21-7]\div2$
$14\div2$
$\boxed{7}$

7. $2.5+3^3-8\div2\cdot4.1$
$2.5+27-4\cdot4.1$
$2.5+27-16.4$
$29.5-16.4$
$\boxed{13.1}$

8. $3+[8\div(9+2(-4))]$
$3+[8\div(9-8)]$
$3+[8\div1]$
$3+8$
$\boxed{11}$

9. $c(3+c)$
$4(3+1\frac{1}{2})$
$4(3\frac{1}{2})$
$\boxed{14}$

10. $a+b+d$
$5+0.25+4$
$\boxed{9.25}$

11. $a+2b-c$
$5+2(0.25)-\frac{1}{2}$
$5+0.5-\frac{1}{2}$
$5.5-\frac{1}{2}$
$\boxed{5}$

12. $\frac{3ab}{2d}$
$\frac{3(5)(0.25)}{2(4)}$
$\frac{15(0.25)}{8}$
$\frac{3.75}{8}$
$\frac{15}{32}$
$\boxed{0.46875}$

13. $\frac{3a+4c}{2c}$
$\frac{3(5)+4(1\frac{1}{2})}{2(1\frac{1}{2})}$
$\frac{15+2}{1}=\boxed{17}$

14. 2^d+a
2^4+5
$16+5$
$\boxed{21}$

15. $2c-4a-5d$
$2(1\frac{1}{2})-4(5)-5(4)$
$3-20-20$
$-19-20$
$\boxed{-39}$

16. $(a+c)^2-bd$
$(5+1\frac{1}{2})^2-0.25(4)$
$(5\frac{1}{2})^2-1$
$\left(\frac{11}{2}\right)^2-1$
$\frac{121}{4}-1$
$\frac{121}{4}-\frac{4}{4}$
$\boxed{\frac{117}{4}=29\frac{1}{4}}$

17. Mean: 2.2
Median: 2
Mode: 2
Range: 4

18. Mean: 9 Mode: 5,
Median: 9 Range: 1

19. Mean: 3.6 Mode: 2.1
Median: 3.45 Range: 3.6

20. Mean: 47.3 Mode: 43
Median: 43 Range: 13

21. 745.3 people per year

22. $7453 \div (10 \times 365) \approx 2.04$ people/day

23. 6.6 $\mathbb{R}, \mathbb{Q}$

24. -7 $\mathbb{R}, \mathbb{Q}, \mathbb{Z}$

25. $9+8=17$ $\mathbb{R}, \mathbb{Q}, \mathbb{Z}, \mathbb{W}, \mathbb{N}$

26. $\sqrt{61}$ $\mathbb{R}, \mathbb{I}$

27. 5 $\mathbb{R}, \mathbb{Q}, \mathbb{Z}, \mathbb{W}, \mathbb{N}$

28. $-2\frac{1}{4}$ $\mathbb{R}, \mathbb{Q}$

29. $4 \div 8 = \frac{1}{2}$ $\mathbb{R}, \mathbb{Q}$

30. 8 $\mathbb{R}, \mathbb{Q}, \mathbb{Z}, \mathbb{W}, \mathbb{N}$

31. Commut Prop Of Mult

32. Dist.

33. Add. Id

34. Mult. Inverse

35. Assoc. Prop. Of Add.

36. Comm. Prop. Of Mult

37. Add. Inv

38. Comm. Prop Of Add.

39. Com. Prop Of Mult.

40. $3x + 5y + 7x - 3y$

$\boxed{10x + 2y}$

41. $3a - 4c - 3c + 5a$

$\boxed{8a - 7c}$

42. $2(4c+5d)+6(2c-d)$

$8c + 10d + 12c - 6d$

$\boxed{20c + 4d}$

43. $3(x-4y) - 2(3x-5y)$

$3x - 12y - 6x + 10y$

$\boxed{-3x - 2y}$

44. $7(0.7m+0.3n)+2.4(0.6m-1.2n)$

$1.4m + 2.1m + 1.44m - 2.88n$

$\boxed{2.84m - 0.78n}$

45. $\frac{1}{2}(4a-2b) + \frac{2}{3}(6b+9a)$

$2a - b + 4b + 6a$

$\boxed{8a + 3b}$

46. $x+3=4$ $\boxed{x=1}$

47. $-5+b=15$ $\boxed{b=20}$

48. $9-x=78$ $-x=69$ $\boxed{x=-69}$

49. $-12=4x$ $\boxed{x=-3}$

50. $\frac{d}{7} = -8$ $\boxed{d=-56}$

51. $9 = \frac{3}{7}y$ $\boxed{y=21}$

52. $3c-4=15$

$3c=19$ $\boxed{c=19/3}$

53. $-2f-8 = 3f-28$

$20 = 5f$

$\boxed{f=4}$

54. $\frac{e+8}{3} = 2e-4$

$e+8 = 6e-12$

$20 = 5e$

$\boxed{e=4}$

55. $\frac{g}{3} - 16 = g - 4$

$\frac{g}{3} = g + 12$

$g = 3g + 36$

$-2g = 36$

$\boxed{g=-18}$

56. $3(7a+17)=46$
$6a+51=46$
$6a=-5$
$\boxed{a=-5/6}$

57. $5=-5(y+3)$
$5=-5y-15$
$20=-5y$
$\boxed{y=-4}$

58. $3(4-5k)=2k-4$
$12-15k=2k-4$
$16=17k$
$\boxed{k=\frac{16}{17}}$

59. $2.3n+1=1.3n+7$
$\boxed{n=6}$

60. $\frac{3}{4}n-2=\frac{1}{2}n+7$
$3n-8=2n+28$
$\boxed{n=36}$

61. $3(2c+25)-2(c-1)=78$
$6c+75-2c+2=78$
$4c+77=78$
$4c=1$
$\boxed{c=1/4}$

62. $-2(x+4)=3(2x-7)+9$
$-2x-8=6x-21+9$
$-2x-8=6x-12$
$4=8x$
$\boxed{x=1/2}$

63. $\frac{3}{4}-\frac{1}{5}x=\frac{2}{5}x+\frac{1}{4}$
$15-4x=8x+5$
$10=12x$
$\boxed{x=5/6}$

64. $I=prt$
$\boxed{r=\frac{I}{pt}}$

65 $A=2\pi r$
$\boxed{r=\frac{A}{2\pi}}$

66. $V=lwh$
$\boxed{h=\frac{V}{lw}}$

67 $V=\frac{1}{3}Bh$ f. h
$3V=Bh$
$\boxed{h=\frac{3V}{B}}$

68. $4a-5b=8$
$-5b=8-4a$
$b=\frac{8-4a}{-5}$
$\boxed{b=\frac{4a-8}{5}}$

69. $qr+s=t$
$qr=t-s$
$\boxed{q=\frac{t-s}{r}}$

70. $3x+2y=-4$
$2y=-3x-4$
$\boxed{y=-\frac{3}{2}x-2}$

71. $y-3=-4(x+1)$
$\boxed{y=-4(x+1)+3}$
$y=-4x-4+3$
$\boxed{y=-4x-1}$

72. $P=2L+2W$
$P-2W=2L$
$\boxed{L=\frac{P-2W}{2}}$ or $\boxed{L=\frac{1}{2}P-W}$

73. 15

74. $|12-9|=3$

75. $-|-3|$

$\boxed{-3}$

76. $|3(-2)+5|$

$|-6+5|$

$|-1|$

$\boxed{1}$

77. $|-4+7|$

$|3|=\boxed{3}$

78. $|-8(3)-4|$

$|-28|=\boxed{28}$

79. $|2.4-1|+1.3$

$|7|+1.3$

$7+1.3$

$\boxed{8.3}$

80. $-|-3^2|$

$-|-9|$

$\boxed{-9}$

81. $n+15$

82. $7-n$

83. $14-n^2$

84. $\frac{n}{2+21} = \frac{n}{23}$

85. $|x-25|=17$

$x-25=17 \quad x-25=-17$

$\boxed{x=42 \quad x=8}$

86. $|k+6|=9$

$k+6=9 \quad k+6=-9$

$\boxed{k=3 \quad k=-15}$

87. $|3x-7|=18$

$3x-7=18 \quad 3x-7=-18$

$3x=25$

$\boxed{x=25/3}$ $\boxed{3x=-11 \quad x=-11/3}$

88. $2|3x+1|=14$

$|3x+1|=7$

$3x+1=7 \quad 3x+1=-7$

$3x=6$ $\boxed{x=2}$ $3x=-8$ $\boxed{x=-8/3}$

89. $|4x-8|=0$

$4x-8=0$

$4x=8$

$\boxed{x=2}$

90. $|3t-5|=2t$

$3t-5=2t \quad 3t-5=-2t$

$-5=-t$ $\boxed{t=5}$ $5t=5$ $\boxed{t=1}$

91. $|a-7|+4=9$

$|a-7|=5$

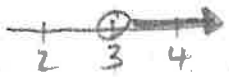
$a-7=5 \quad a-7=-5$

$\boxed{a=12 \quad a=2}$

92. $|9a-8|+14=10$

$|9a-8|=-4$ $\boxed{\text{No solution}}$

93. $x>3$



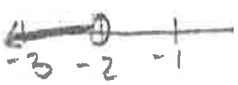
94. $x-7 \leq -4$

$x \leq 3$

95. $\frac{1}{2}x+2<1$

$\frac{1}{2}x<-1$

$x<-2$



96. $x+1 \geq 3x-3$

$-2x \geq -4$

$x \leq -2$

97. $3 \leq \frac{9}{4} - 4$

$7 \leq \frac{9}{4}$

$28 \leq 9 \quad g \geq 9$

98. $3(4x+7) < 21$

$|2x+21| < 21$

$12x < 0$

$x < 0$

99. $2(m-5)+7m > 5m+5$

$2m-10+7m > 5m+5$

$9m-10 > 5m+5$

$4m > 15$

$m > 15/4$

100. $-2n > 14$

$n < -7$

101. $4-3x \geq 16$

$-3x \geq 12$

$x \leq -4$

102. $\frac{2x+1}{3} < 5$

$2x+1 < 15$

$2x < 14$

$x < 7$

103. $-2 \leq 7-x$

$-9 \leq -x$

$9 \geq x$

$x \leq 9$

104. $\frac{1}{2} + x > \frac{3}{4}x + \frac{1}{2}$

$\frac{1}{4}x > 0$

$x > 0$

105. $8 + 2n = 5$

106. $3(n+1) = 30$

107. $5 < 3n$

108. $n-4 > 2$

109. $8n \geq 0$

110. $n^2 - 3 \leq 12$

111. $|8a| \leq 24$

$8a \leq 24 \quad 8a \geq -24$

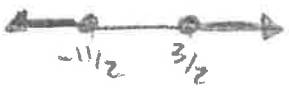
$a \leq 3 \quad a \geq -3$

112. $|2x+4| \geq 7$

$2x+4 \geq 7 \quad 2x+4 \leq -7$

$2x \geq 3 \quad 2x \leq -11$

$x \geq 3/2 \quad x \leq -11/2$



113. $|x+2| > 5$

$x+2 > 5 \quad x+2 < -5$

$x > 3 \quad x < -7$

114. $x-4 \le -7$ or $2x+1 > 7$

$x \le -3$ $\quad 2x > 6$

$x > 3$

115. $-5 < x+2 < 9$

$-7 < x < 6$

116. $3|4x-7| < 27$

$|4x-7| < 9$

$4x-7 < 9$ $\quad 4x-7 > -9$

$4x < 16$ $\quad 4x > -2$

$x < 4$ $\quad x > -1/2$

117. $|2x+4| < -9$ $\boxed{\emptyset}$

118. $x+2 < 3$ or $-3x-5 < 7$

$x < 1$ $\quad -3x < 12$

$x > -4$

All Real numbers

119. $\sqrt{24} = \sqrt{4 \cdot 6} = \boxed{2\sqrt{6}}$

120. $\sqrt{50} = \sqrt{25 \cdot 2} = \boxed{5\sqrt{2}}$

121. $\sqrt{27} = \boxed{3\sqrt{3}}$

122. $\sqrt{56} = \sqrt{4 \cdot 14} = \boxed{2\sqrt{14}}$

123. $\sqrt{44} = \sqrt{4 \cdot 11} = \boxed{2\sqrt{11}}$

124. $\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{\frac{\sqrt{2}}{2}}$

125. $\frac{2}{\sqrt{3}} = \boxed{\frac{2\sqrt{3}}{3}}$

126. $\frac{8}{\sqrt{6}} = \frac{8\sqrt{6}}{6} = \boxed{\frac{4\sqrt{6}}{3}}$

127. $x^2+6x+8=0$

$x^2+4x+2x+8=0$

$x(x+4)+2(x+4)=0$

$(x+2)(x+4)=0$

$\boxed{x=-2 \quad x=4}$

128. $x^2-2x-15=0$

$x^2-5x+3x-15=0$

$x(x-5)+3(x-5)=0$

$(x+3)(x-5)=0$

$\boxed{x=-3 \quad x=5}$

129. $2x^2+3x-9=0$

$2x^2+6x-3x-9=0$

$2x(x+3)-3(x+3)=0$

$(2x-3)(x+3)=0$

$\boxed{x=3/2 \quad x=-3}$

130. $3x^2-2x-8=0$

$3x^2-6x+4x-8=0$

$3x(x-2)+4(x-2)=0$

$(3x+4)(x-2)=0$

$\boxed{x=-4/3 \quad x=2}$

131. $x^2-7x+12=0$

$x^2-3x-4x+12=0$

$x(x-3)-4(x-3)=0$

$(x-4)(x-3)=0$

$\boxed{x=4 \quad x=3}$

132. $2x^2+3x-20=0$

$2x^2+8x-5x-20=0$

$2x(x+4)-5(x+4)=0$

$(2x-5)(x+4)=0$

$\boxed{x=5/2 \quad x=-4}$

133. $x^2+6x+9=0$

$x=\frac{-6\pm\sqrt{6^2-4(1)(9)}}{2(1)}$

$x=\frac{-6\pm\sqrt{36-36}}{2}$

$x=\frac{-6\pm0}{2}$

$\boxed{x=-3}$

134. $x^2-x-12=0$

$x=\frac{1\pm\sqrt{(-1)^2-4(1)(-12)}}{2(1)}$

$x=\frac{1\pm\sqrt{1+48}}{2}$

$x=\frac{1\pm\sqrt{49}}{2}$

$x=\frac{1\pm7}{2}$

$x=\frac{8}{2}\quad x=\frac{-6}{2}$

$\boxed{x=4\quad x=-3}$

135. $2x^2+5x-12=0$

$x=\frac{-5\pm\sqrt{5^2-4(2)(-12)}}{2(2)}$

$x=\frac{-5\pm\sqrt{25+96}}{4}$

$x=\frac{-5\pm\sqrt{121}}{4}$

$x=\frac{-5\pm11}{4}$

$x=\frac{-16}{4}\quad x=\frac{6}{4}$

$\boxed{x=-4\quad x=3/2}$

136. $3x^2-7x-6=0$

$x=\frac{7\pm\sqrt{(-7)^2-4(3)(-6)}}{2(3)}$

$x=\frac{7\pm\sqrt{49+72}}{6}$

$x=\frac{7\pm\sqrt{121}}{6}$

$x=\frac{7\pm11}{6}$

$x=\frac{18}{6}\quad x=\frac{-4}{6}$

$\boxed{x=3\quad x=-2/3}$

137. $x^2-10x+21=0$

$x=\frac{10\pm\sqrt{10^2-4(1)(21)}}{2(1)}$

$x=\frac{10\pm\sqrt{16}}{2}$

$x=\frac{10\pm4}{2}$

$x=14/2\quad x=6/2$

$\boxed{x=7\quad x=3}$

138. $2x^2+5x-25=0$

$x=\frac{-5\pm\sqrt{5^2-4(2)(-25)}}{2(2)}$

$x=\frac{-5\pm\sqrt{25+200}}{4}$

$x=\frac{-5\pm\sqrt{225}}{4}$

$x=\frac{-5\pm15}{4}$

$x=\frac{-20}{4}\quad x=10/4$

$\boxed{x=-5\quad x=5/2}$