Algebra 2 Review Test #1 Fall 2014

Sections: 1-3 to 1-5, 2-1, 2-2, 2-4, and 7-6

Solve each equation.

1. $3(m-4)-8m=7-3m-15$

2. $9+2k-2+6k=4(2k+3)-9$

Solve for the variable indicated. State restrictions on the the variables.

3. $Q(M-Y)+K=R$ Solve for M

4. $\frac{CH-A}{W}+E=G$ Solve for H

5. $XJ-TB=CQ+AB$ Solve for B

Solve each inequality.

6. $9-3y+6+y<21$

7. $6(R-5)+40\geq 4R-9+2R-1$

Sate the solution to eac compound inequality. Give your answer in the simplest form possible.

8. $x>12$ *OR* $x\geq 10$

9. $y<3$ *AND* $y>6$

10. $m\geq -1$ *AND* $m<5$

11. $H\leq 2$ *AND* $H\leq 5$

12. $c\geq 4$ *OR* $c<8$

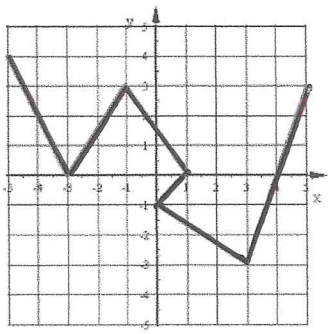
13. $M<0$ *OR* $M\geq 2$

For 14 to 17, does each represent a function?

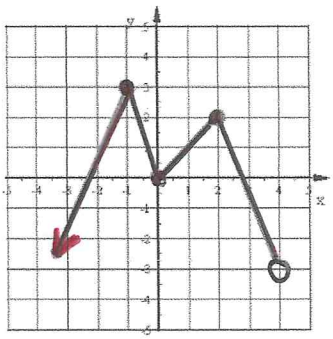
14. $(4,3),(3,-6),(8,2),(4,1)$

15. $(-1,5),(2,5),(3,9),(-7,0)$

16.



17.



18. State the Domain and Range of the relation in Problem 14.

19. State the Domain and Range of the relation in Problem 17.

20. Write the equation of the line that passes through each pair of points in the form specified, if any.

a) Both Point-Slope and Slope-Intercept Form $(2,17)\&(-1,5)$

b) $(3,-5)\&(3,7)$

c) $(-2,-4)\&(5,-4)$

21. Use this given line: $y=4x-9$

a) Write the equation of a line that is parallel to this line and passes through the point $(-2,3)$

b) Write the equation of a line that is perpendicular to this line and passes through the point $(8,1)$

Solve each.

22. $|4x - 5| + 1 = 19$ 23. $|x + 7| > 20$ 24. $|2x - 7| \leq 11$

Use these functions for the 25-30:

$f(x) = x - 3$ $g(x) = 4x + 7$ $h(x) = \frac{2x - 1}{x + 6}$ $k(x) = x^2 - 2x$

25. Find $g(h(2))$ 26. Find $f(k(-5))$ 27. Find $k(h(7))$

28. Find $k(f(x))$. Simplify as much as possible. 29. Find $h(g(x))$. Simplify as much as possible.

30. Find $g(h(x))$. Simplify as much as possible.

31. Use the data in the table which shows number of square kilometers of rain forest as a function of the year.

Year	Km^2 of Rain Forest
1990	162,000
1995	151,000
2000	136,000
2005	107,500
2010	83,000

a. Find the equation of the trendline by doing a linear regression.

b. State the Correlation Coefficient rounded to the nearest thousandth (3 decimal places). Is this equation a good fit? Explain your answer.

c. Use the equation of the trendline to find the year when there will be only 10,000 km^2 of Rain Forest remaining. Round to the nearest whole number.

d. Use the the equation of the trendline to find how many square km of Rain Forest there will be in 2020. Round to the nearest whole number.

Algebra 2 Review Test #1 ANSWERS Fall 2014

1. $m = -2$ 2. No solution 3. $\frac{R-K}{Q} + Y$ OR $\frac{R-K+QY}{Q}$ $Q \neq 0$

4. $\frac{W(G-E)+A}{C}$ $C \neq 0, W \neq 0$

5. $\frac{XJ-CQ}{A+T}$ OR $\frac{CQ-XJ}{-T-A}$ $A+T \neq 0$ or $-T-A \neq 0$ or $A \neq -T$

6. $y > -3$ 7. All Real Numbers

8. $x \geq 10$ 9. No Sol 10. $-1 \leq m < 5$ 11. $H \leq 2$

12. All real numbers 13. $M < 0$ *OR* $M \geq 2$ 14. *No* 15. *Yes*

16. NO 17. Yes 18. D: $\{3,4,8\}$ R: $\{-6,1,2,3\}$

19. D: $x < 4$ R: $y \leq 3$

20. a) Point-Slope Form: $y - 17 = 4(x-2)$ or $y - 5 = 4(x+1)$ Slope-Intercept Form $y = 4x + 9$
b) $x = 3$ c) $y = -4$

21. a) $y - 3 = 4(x+2)$ or $y = 4x + 11$ b) $y - 1 = -\frac{1}{4}(x-8)$ or $y = -\frac{1}{4}x + 3$

22. $x = -\frac{13}{4}, \frac{23}{4}$ 23. $x < -27$ or $x > 13$ 24. $-2 \leq x \leq 9$

25. $\frac{17}{2} = 8.5$ 26. 27 27. -1 28 $x^2 + 4x + 15$

29. $\frac{8x+13}{4x+13}$ 30. $\frac{15x+38}{x+6}$

31. a. EQ: $y = -4030x + 8,187,900$
b. $r = -0.984$. Yes this is a good fit because $|r|$ is very close to 1.
c. about 2029
d. 47,300 km^2