Check answers, please.

Advanced Algebra 2 1st semester final review #2   2012

1. Solve for z: $M = \dfrac{x+y-z+w}{7}$

   $z = x + y - 7m + w$

2. What term completes the square for $x^2 + 10ax$

   $25a^2$

3. Is this function linearly related?

x	y
-2	3
-6	15
-7	18

   Same slope = linear relationship

4. The values in the table are linearly related. Answer the following questions:

x	y
536	2
646	A
756	10
866	B

   a) is A>B ? NO
   b) is B > A ? yes
   c) is A = B ? no
   d) A + B = ? 20

   A=6 B=14

5. Write the equation of the line that contains (0,2) and (3,0) in standard form.

   $2x + 3y = 6$

6. A is directly proportional to the square root of B. If A=10 when B=25, Find B when A is 4.

   B = 4

7. Find the least squares regression line and use it to estimate the y value when x=10.5 Round to 4 places after the decimal.

x	0	2	3	6	7	9	12
y	14	19	22	26	26	32	38

   $y = 1.8095x + 14.7527$

8. Solve and graph

   $4x + 5 > 1$ and $3 \geq -7 + 2x$

   $-1 < x \leq 5$

9. Solve for x $|3x-1| \leq 9$ $\dfrac{-8}{3} \leq x \leq \dfrac{10}{3}$

10. Graph $-5 - 3i$

11. How many solutions does this system have? $\begin{cases} y = 3x+5 \\ -3x+y=7 \end{cases}$ No solutions

12. $|3-7i| = \sqrt{58}$

13. Graph $y > \dfrac{3}{4}x - 1$

14. The Lenc family is going to Taco-Shmaco for tacos and sodas. Write an inequality to represent how many sodas they can buy if soda costs $1.85 each and tacos are $2.20 each. They only have $15 to spend. $S \leq \dfrac{15 - 2.20T}{1.85}$

15. Graph the solution $\begin{cases} x+3y > 6 \\ 2x - y \geq 2 \end{cases}$

16. Using Cramer's Rule to solve the following system. What would D_z be?

   $x + y + z = 5$
   $x - y + 2z = 2$
   $x + y = 6$

   $D_z = -2$

17. How many solutions does this system have? $\begin{cases} 3x+y-5=0 \\ 5x = 2y+8 \end{cases}$ one solution

18. Four shirts and 3 jackets cost $313. While five jackets and 2 shirts cost $419. How much does each jacket cost? $75

19. Find three ordered pairs that satisfy $\dfrac{3}{4}x - \dfrac{1}{2}y \geq -1$ $(0,0), (1,2), (2,-2)$

20. Find an ordered pair that satisfies this system. $\begin{cases} y > -3x-1 \\ -3x+y \leq 5 \end{cases}$ $(2,3)$ any point in shaded region.

21. Solve $k^2 + 625 = 0$ $k = \pm 25i$

22. What are the zeroes of $f(x) = 3x^2 - 13x - 10$ $x = 5$ or $x = -2/3$

23. Find the x-intercepts of $f(x) = (2-x)(x+3)$ $(2,0)$ and $(-3,0)$

24. Use the quadratic formula to solve. Round to nearest tenths. $3x^2 - 4x = 5$ $\{2.1, -.8\}$

25. Find the sum of the first 100 terms of the series 20+16+12+8+... $S_{100} = -17800$

26. When $\dfrac{1-3i}{2+i}$ is put in a+bi form, what is the value of a? $a = 1$

27. How many real solutions are there for $x^2 + 3x + 10 = 0$ no real solutions

28. Find the solution for $x^2 - 7x \geq 30$ $x \leq -3$ or $x \geq 10$

29. Simplify: $(5+6i) - 2(4-5i)$ $-3 + 16i$