Team Questions Algebra I

1.
Simplify and write the powers *without using* negative exponents.

$$\frac{M^{92}A^{42}T^{-36}H^{-27}}{M^{43}A^{-37}T^{-5}H^{4}}$$

2.Factor $5x^2 - 3000x - 2{,}000{,}000$

3. A well-known chain of ice cream stores sells a cone with three scopes of ice cream for $1.28 and a cone with 2 scoops of ice cream for $.87. How much would you expect to pay for a cone with 4 scoops of ice cream?

4. W.Wilcox had 25 students in his first period class. On the first day of school, he asked them to shake hands and introduce themselves to one another. When they were finished, he asked the students, " How many handshakes have just been exchanged?"

5.

$$\left[r^3 - s^3 + \left(-t\right)^3\right]u^3 \text{ if } r=3,\ s=-2,\ t=1,\ u=4$$

6. The area of a rectangle is 252 ft^2. The perimeter of the rectangle is 64 ft. Find the length and width of the rectangle.

7. Mr. Sangupta invested 1/2 of his money in land, 1/10 in stock, and 1/20 in machinery. The remainder, $35,000, is in a savings account. What is the total amount of money that Mr. Sangupta saved or invested?

8. How many gallons of milk that is 3 1/2 % butterfat milk must be added to 80 gallons of 1% butterfat milk to make milk that is 2 % butterfat?

9. On a roundtrip to work, Jan traveled at an average speed of 35 miles per hour going and 40 miles per hour coming back over the same route. If the entire trip took 2 1/2 hours, how far does Jan live from her job?

10. multiply

$(4-a^x)(4+a^x)$

11. Factor:

n^4-18n^2+32

12. Write an equation of a line in standard form that passes through B(-3, 7) and is parallel to the line through C(1,4) and D(2, 6).

13. Evaluate f(-2) - g(1) given that $f(x)= x^2+ 1$ and $g(x)= 5x-3$.

14. The Liu family has one hundred dollars to split among the four of them. If Mr. Liu receives 10 dollars more than Mrs. Liu and Mrs. Liu receives 5 dollars more than Walter Liu, and Walter Liu receives 3 dollars more than Sara Liu, how much does each person receive?

15. Find all sets of three consecutive positive odd integers whose sum is less than 24 and add all the elements of those sets.