Algebra 1
Chapter 9 Review

Name_____
Date_____

Show ALL work to receive credit!

1. Write the polynomial in standard form: $-3x - 5x^2 - 4 + 2x^2$

2. Find the degree of the polynomial: $-9 + 3x^2 - 4x + 5x^4$

3. Simplify the difference: $(-3x^2 - 5 + 2x) - (-7x - 2x^2 + 5)$

4. Simplify the sum: $(5u^3 + 3u^2 + 3) + (2u^3 - 7u + 6)$

5. Simplify the product: $3n(3n^2 + 4n + 5)$

6. Simplify the product: $(4x - 2)(3x - 2)$

7. Simplify the product: $(4m + 7)^2$

Factor the following polynomials completely:

8. $25w^8 + 30w^6$

9. $w^2 + 16w + 55$

10. $4x^2 + 4x + 1$

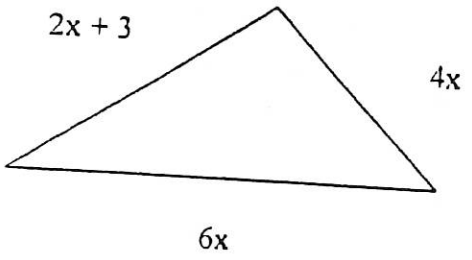
11. $d^2 - 14d + 49$

12. $16b^2 - 9$

13. $2d^2 + 16d + 14$

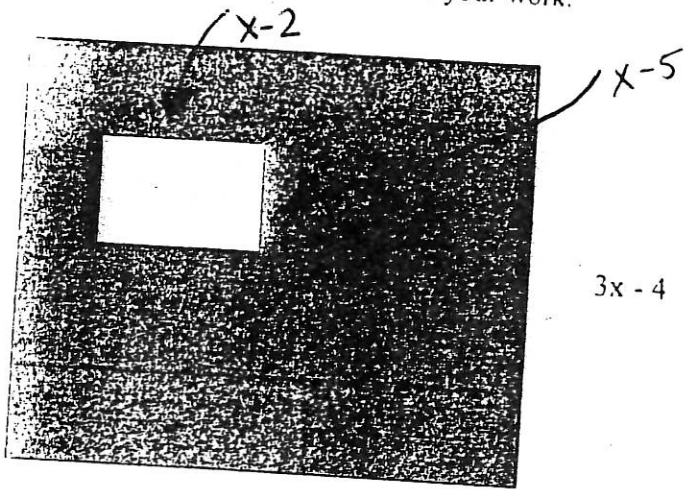
14. $x^2 - x - 56$

15. Write the perimeter of the figure.



16. Find area of the shaded region. Show all your work.

16. _____



How Much Did They Cost?

Mr. Nelson went to Taco Town to get lunch for the eighth-grade teachers one day when they were having a grade-level meeting. He bought eight tacos and five burritos, and the total cost before tax was $13.27. On the day of the next grade-level meeting, he went back to Taco Town and got six tacos and seven burritos for a cost of $14.47 before tax. The teachers now want to pay Mr. Nelson, but Mr. Nelson doesn't remember how much one taco costs or how much one burrito costs.

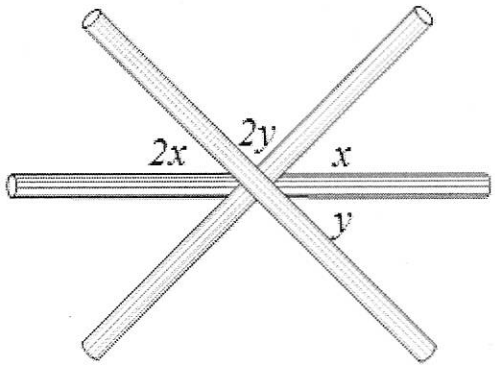
Ms. Payne tells the teachers that there is enough information to figure out how much a taco costs and how much a burrito costs and that she will get one of her math students to do the calculation. She has chosen you to do the work. Find the cost of one taco and the cost of one burrito, showing your work in arriving at the answer. Provide a written explanation to present to the eighth-grade teachers so that they will understand how you solved the problem.

Playing with Straws

(Adapted from "Lunch Lines Continued" in the GPS Units)

Paul, Jane, Justin, Sarah, and Opal were finished with lunch and began playing with drink straws. Each one was making a line design using either 3 or 4 straws. Since they had just come from math class where they had been studying special angles, Paul pulled his pencil out of his book bag and labeled some of the angles and lines. He then challenged himself and the others to find the values of x and y. He also double-dog dared them to find each of the angle measurements.

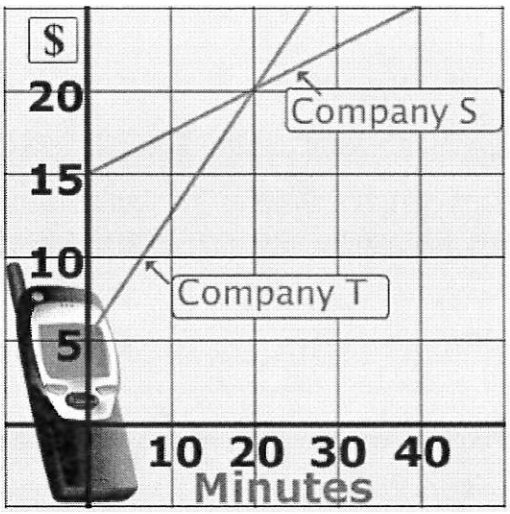
Explain to Jane, Justin, Sarah, and Opal how to find the values of x and y as well as how to determine each of the angle measurements for Paul's straw figure shown below.



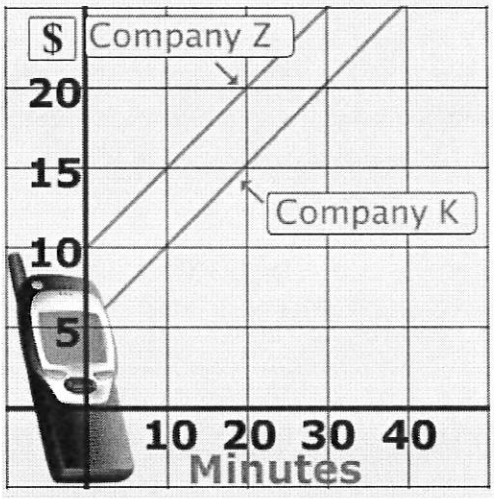
Cell Phone Plans

Which plan is best for you?

The graph below represents the monthly rate of two cell-phone companies.



Which company offers the better plan and why? Defend your reasoning.



What does this graph, which compares Company Z and Company K, tell you?