## **Combining Functions Homework**

Name: \_\_\_\_\_

Date:\_\_\_\_\_

**Combining Functions** 

Given the functions f(x) = 4x + 8 and g(x) = 2x - 121. Find f(x) + g(x). 2. Find f(x) - g(x).

Given the functions  $f(x) = 3x^2 + 5x - 8$  and  $g(x) = 2x^2 - 9$ 3. Find f(x) + g(x). 4. Find f(x) - g(x).

5. Find f(2) and g(2).

6. If e(x) = f(x) - g(x), find e(2).

7. What do you notice about your answers to questions 5 and 6?

Given the functions  $f(x) = 2x^2 + 3x$  and g(x) = 5x - 18. Find 2f(x) + 3g(x). 9. Find 5f(x) - 2g(x).

Given the functions p(x) = x + 3, m(x) = x - 4, and q(x) = 2x10. Find  $q(x) \bullet p(x)$ .11.  $4q(x) \bullet m(x)$ 12. p(5x + 4) - m(3x + 1)

13. Find p(4x + 2) + m(5x + 3) - q(3x)

14. Jill has a regular savings account that has \$350 in it. She saves \$55 each month in this account. She is also going on tour with her school choir next year. She opens up a new savings account just for tour. She deposits \$25 to start the account and then, decides to save \$40 each month from her paycheck into her tour savings account.

- a. Write a function to represent the prices r(x) for Jill's regular savings account.
- b. Write a function t(x) to represent Jill's tour savings account.
- c. Combine the two functions into one function s(x) = r(x) + t(x).
- d. Calculate her totals savings after 3 months, 6 months, and 10 months.

15. Joseph's Plumbing Company employs 3 workers. They employ out at the following rates.

- Joseph (owner): \$75 (flat fee) + \$65 per hour
- Sam (an apprentice): \$10 (flat fee) + \$25 per hour
- Sally: \$50 (flat fee) + \$45 per hour
- a. Write 3 functions, one for each employee.
- b. Write a new function to show the total amount of money coming in for the company in terms of hours worked?
- c. How much money will the company make if all the employees work an 8 hour day?