**Secondary Math 2 5.5 Homework Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_**

**Combining Functions**

1. **Given** $f\left(x\right)=2x+5$ **and** $g\left(x\right)=3x-2$**, simplify the expressions:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| a) | $$\left(f+g\right)\left(x\right)$$ | b) | $$\left(f-g\right)\left(x\right)$$ | c) | $$\left(fg\right)\left(x\right)$$ |
| d) | $$\left(f+g\right)\left(2\right)$$ | e) | $$\left(f-g\right)\left(0\right)$$ | f) | $$\left(fg\right)\left(3\right)$$ |

1. **Given the following functions, answer questions**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| 1.
 | 1.
 | 1.
 |
| 1.
 | 1.
 | 1. $h(x)∙w(x)$
 |

1. A company estimates that its cost and revenue can be modeled by the functions  and , where x is the number of units produced. (Assume C(x) is cost and R(x) is revenue)

a) Write the equation, P(x), that would model the company’s profit. (Hint: profit = revenue – cost)

b) What would be the profit if the company only sold 10 units?

c) What would be the profit if the company sold 200 units?

**Review Problems:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Simplify:$$\frac{2u^{0}v^{4}}{3u^{-1}v^{-3}}$$ |  | Simplify:$$\frac{x^{-2}}{\left(x^{-\frac{3}{2}}\right)^{\frac{1}{2}}∙\left(x^{0}\right)^{-\frac{7}{4} }}$$ |
|  | Simplify:$$\left(8a^{3}\right)^{1/3}$$ |  | Simplify:$$\left(4-3i\right)\left(5+2i\right)$$ |