Precalculus Section 1.5 Exercises

Use the functions $f(x) = \sqrt{3x+2}$ and $g(x) = \frac{2}{x-5}$ to find the following values if they exist.

1. $(f+g)(2)$
2. $(f-g)(-1)$
3. $(g-f)(1)$
4. $(fg)\left(\frac{1}{2}\right)$
5. $\left(\frac{f}{g}\right)(0)$
6. $\left(\frac{g}{f}\right)(-2)$

Use the same functions above to find the domain of the indicated function. Then find an simplify an expression for it.

7. $(f+g)(x)$
8. $(f-g)(x)$
9. $(fg)(x)$
10. $\left(\frac{f}{g}\right)(x)$

11. The daily cost, in dollars, to produce x boxes of Cookie Monster Chocolate Crunchies is $C(x) = .5x + 25$ and the price-demand function, in dollars per box, is $p(x) = 200 - 2x$ for $0 \leq x \leq 100$. Find and interpret $C(0)$, $p(5)$, and $\bar{C}(10)$. Find and simplify $R(x)$ and $P(x)$. Solve $P(x) = 0$ and interpret.