

## Classwork Inverse Functions

Please work all problems on a separate sheet of paper.

In exercise 1 – 4, determine whether  $f$  and  $g$  are inverse functions by finding  $(f \circ g)(x)$  and  $(g \circ f)(x)$

1.  $f(x) = 3x - 4$ ,  $g(x) = \frac{1}{3}x + \frac{4}{3}$

2.  $f(x) = \frac{1}{2}x + 3$ ,  $g(x) = 2x + 6$

3.  $f(x) = \frac{2}{x+3}$ ,  $g(x) = \frac{3-2x}{x}$

4.  $f(x) = 2x^3 + 7$ ,  $g(x) = \sqrt[3]{\frac{x-7}{2}}$

In exercises 5 – 8, find the inverse of each one-to-one function. Graph both the function and its inverse on the same coordinate axes.

5.  $f(x) = x - 4$

6.  $f(x) = 2x + 5$

7.  $f(x) = \sqrt{x-4}$

8.  $f(x) = x^3 + 2$