# H. Algebra II Semester II Review
## Part 6 – Inverse Functions

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### 6.a Analytic Definition of Inverse Functions

**Determine whether the following pairs of functions are inverse.**

**1.** $f(x)=\frac{x+2}{x-5}$

$g(x)=\frac{5x+2}{x-1}$

**2.** $f(x)=\frac{5}{x-2}$

$g(x)=\frac{x-2}{5}$

**Find the inverse of each function.**

**3.** $f(x)=5+\sqrt{x+1}$

**4.** $f(x)=\sqrt{\frac{x}{3}}-6$

**5.** $f(x)=\frac{x-3}{x+2}$

**6.** $f(x)=\sqrt[5]{x^3}=x^{3/5}$

**Review the definition of inverse functions (it is a pair of equations), the conditions for existence of an inverse function and the procedure for finding an inverse.**

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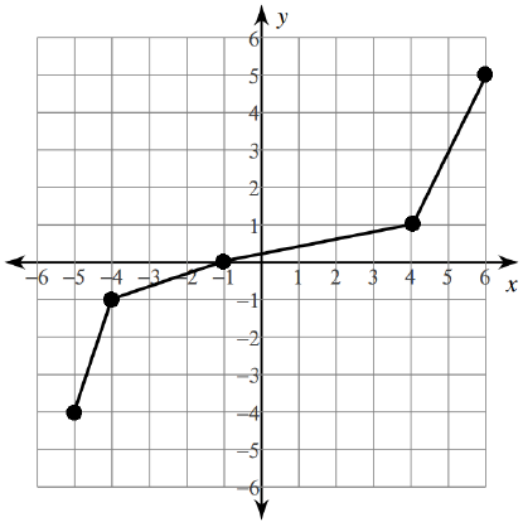
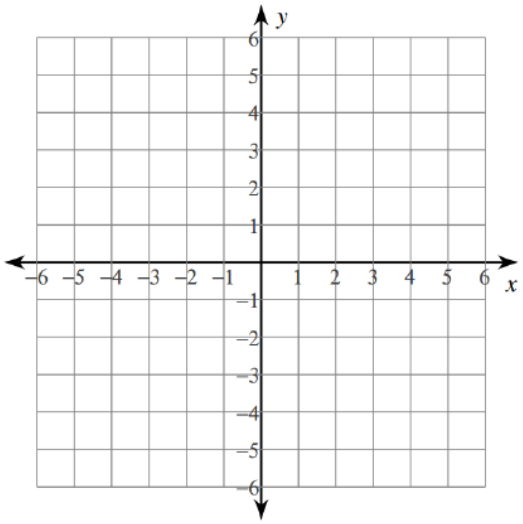
### 6.b Characteristics of Inverse Functions

**Use the graph of the following function to generate a graph of its inverse function on the right.**




**Recall that if $f(a)=b$ then $f^{-1}(b)=a$. This also means that if the graph of $f(x)$ contains the point $(a,b)$ then the graph of $f^{-1}(x)$ contains the point $(b,a)$. Because of this, a graph showing both $f(x)$ and $f^{-1}(x)$ should appear to be <u>reflected</u> about the line $y=x$.**