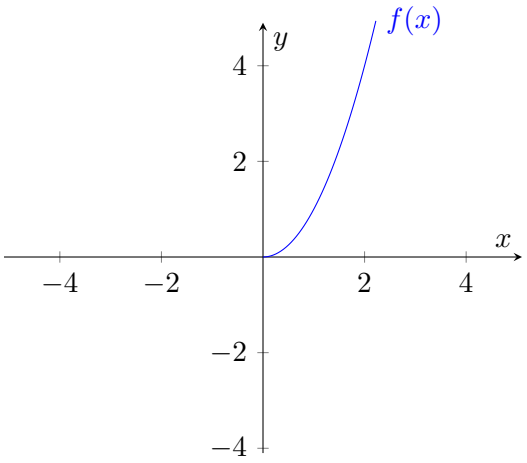
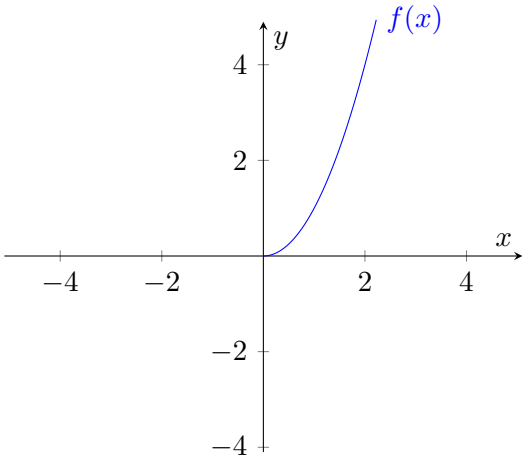
ALGEBRA 2 HONORS
FUNCTIONS PRACTICE QUIZ

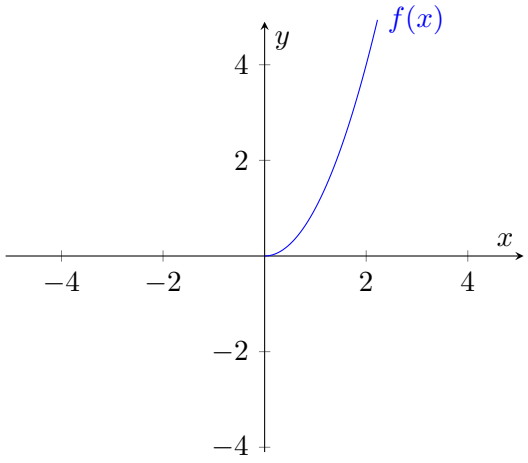
Question 1. Use partial fraction decomposition to decompose the fraction $\dfrac{-x-7}{x^2}$.

Question 2. Consider the following function which is drawn below:



(a) Complete the drawing assuming that $f(x)$ is an *even* function.
(b) Complete the drawing assuming that $f(x)$ is an *odd* function.





Question 3. Let $f(x) = \dfrac{x}{1-x^2}$. Is $f(x)$ an *even* function, *odd* function, or neither?

Question 4. Let f be the function given by the table

x	$f(x)$
1	2
2	3
3	1
4	5
5	4

x	$g(x)$
1	2
2	3
3	4
4	1
5	5

(a) Given that f^{-1} and g^{-1} exist, write down the table for $f^{-1}(x)$ and $g^{-1}(x)$.
(b) Compute the composition

$$(g \circ f)(5), \quad (f \circ g \circ f^{-1})(2)$$

Question 5. Let $f(x) = \dfrac{2x}{x+3}$ and $g(x) = 2x + 3$. Find $f^{-1}(x)$ and $g^{-1}(x)$.

Question 6. Let $f(x)$ be an odd function and $g(x)$ be an even function. Prove that $(g \circ f)(x)$ is also an even function.