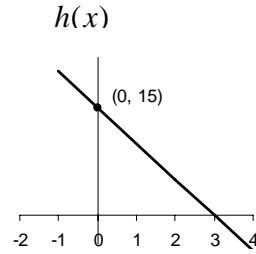
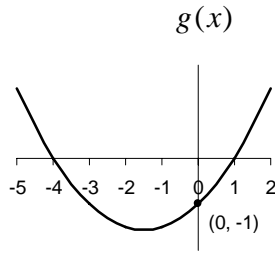
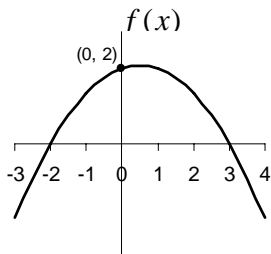


Use proper notation and show all work for full credit. Label all sketches clearly. Neatness and completeness of answers/ solutions are important.

1. Information about a polynomial is given in each row of the table below. Give a possible formula and a clear sketch of the graph for each polynomial. Complete any blank entries in the table.

	x-intercepts	y-intercept	$x \rightarrow -\infty$	$x \rightarrow \infty$	turning points	degree
A.	-3, 1, 5	-2	$y \rightarrow \infty$		2	
B.	0, 8			$y \rightarrow \infty$	1	4
C.	2	3				4
D.	none		$y \rightarrow -\infty$		3	

2. Use the graphs below to answer the following:



A. Write a possible formula for $m(x) = \frac{f(x)}{g(x)}$. Find the equations of all asymptotes, all intercepts, and the interval(s) where $m(x) > 0$.

B. Write a possible formula for $n(x) = \frac{g(x)}{h(x)}$. Find the equations of all asymptotes and all zeros.

C. Find a possible formula for $q(x) = \frac{1}{(h(x))^2}$. Find the equations of all asymptotes.

D. Find a possible formula for $p(x) = \frac{h(x)}{f(x)+1}$. Find the equations of all asymptotes and all intercepts.

E. Find a possible formula for $s(x)$ where $s(x)$ looks identical to $g(x)$ except there is a hole at $x = -3$.