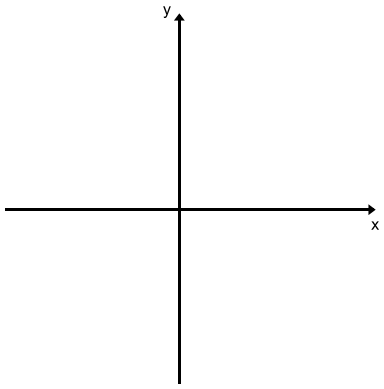
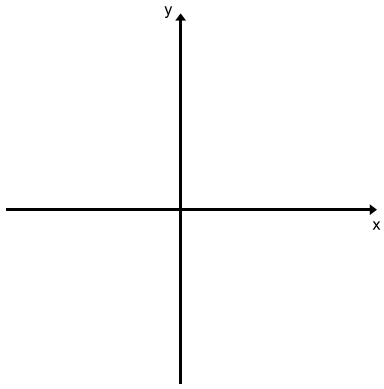
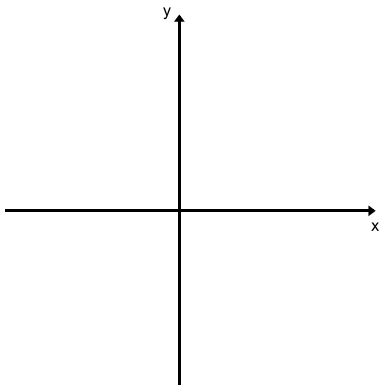
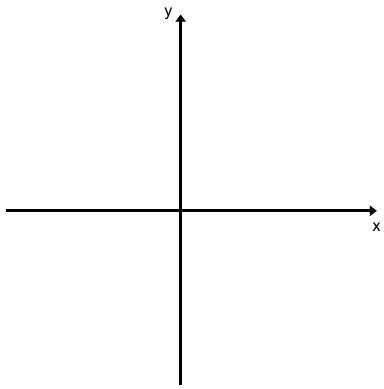
Name_____HWK Function Operations and their related graphs 1 Hour_____

You are given the following functions

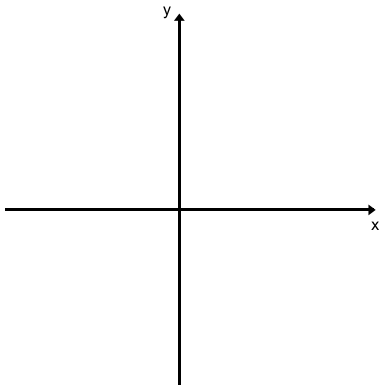
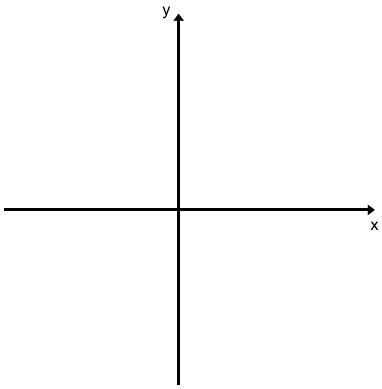
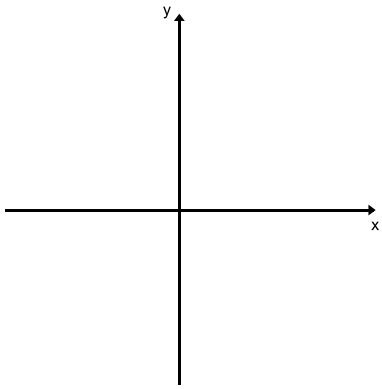
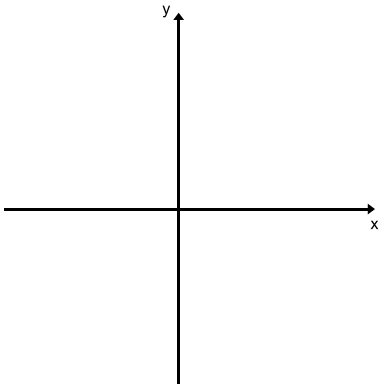
$f(x) = 2x + 4$	$g(x) = x^2 - 3x$	$h(x) = \sqrt{x - 4}$	$j(x) = \frac{1}{x - 10}$
State the domain using any method	State the domain using any method	State the domain using any method	State the domain using any method
State the range using any method	State the range using any method	State the range using any method	State the range using any method
	State the local extreme as a point	State the local extreme as a point	State the asymptotes as lines

Give a detailed sketch for f(x)	Give a detailed sketch for g(x)
	
Give a detailed sketch for h(x)	Give a detailed sketch for j(x)
	

You are given the following functions

$f(x) = 2x + 4$	$g(x) = x^2 - 3x$	$h(x) = \sqrt{x - 4}$	$j(x) = \dfrac{1}{x - 10}$

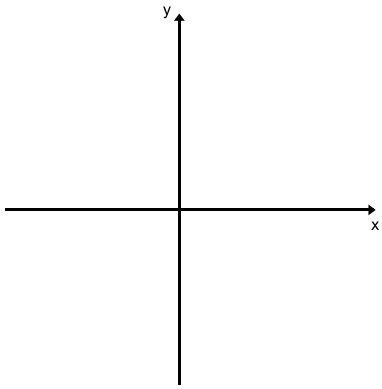
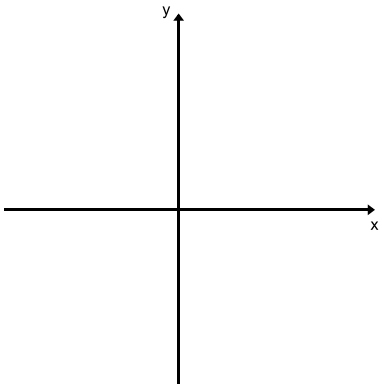
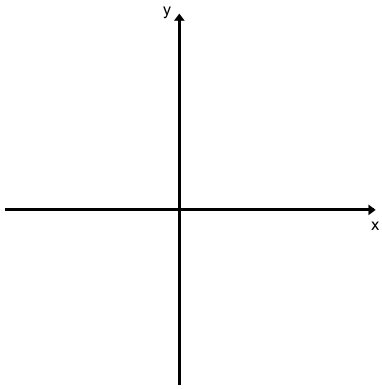
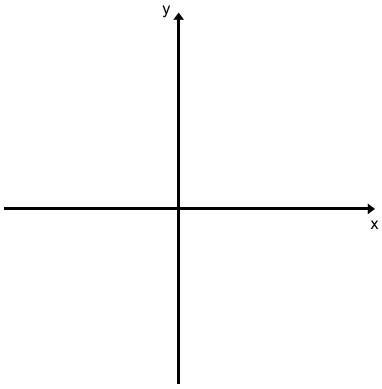
Write $(f + g)(x)$ in its simplest form	Write $(f - g)(x)$ in its simplest form	Write $(fg)(x)$ in its simplest form	Write $\left(\frac{f}{g}\right)(x)$ in its simplest form State this function's domain restrictions

Give a detailed sketch for $(f + g)(x)$	Give a detailed sketch for $(f - g)(x)$
	
Give a detailed sketch for $(fg)(x)$	Give a detailed sketch for $\left(\frac{f}{g}\right)(x)$
	

You are given the following functions

$f(x) = 2x + 4$	$g(x) = x^2 - 3x$	$h(x) = \sqrt{x - 4}$	$j(x) = \dfrac{1}{x - 10}$

Write $(g - f)(x)$ in its simplest form	Write $\big(f(g(x))\big)$ in its simplest form	Write $\big(g(f(x))\big)$ in its simplest form	Write $\left(\frac{g}{f}\right)(x)$ in its simplest form State this function's domain restrictions

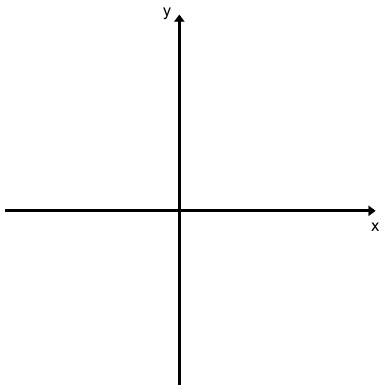
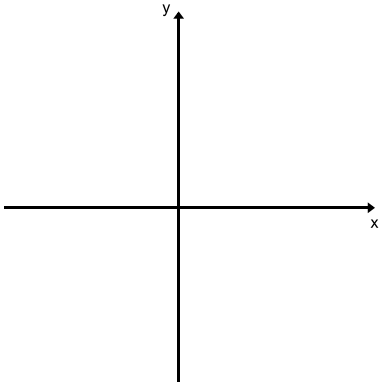
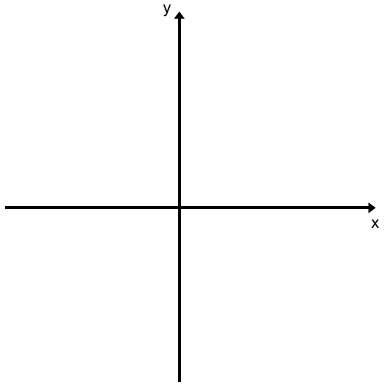
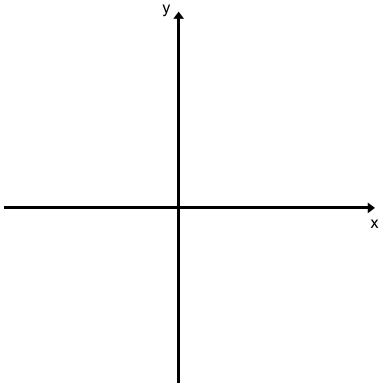
Give a detailed sketch for $(g - f)(x)$	Give a detailed sketch for $\big(f(g(x))\big)$
	
Give a detailed sketch for $\big(g(f(x))\big)$	Give a detailed sketch for $\left(\frac{g}{f}\right)(x)$
	

Which of the functions above are compositions?

You are given the following functions

$f(x) = 2x + 4$	$g(x) = x^2 - 3x$	$h(x) = \sqrt{x - 4}$	$j(x) = \dfrac{1}{x - 10}$

Write $(f - j)(x)$ in its simplest form	Write $\big(h(g(x))\big)$ in its simplest form	Write $\big(h(f(x))\big)$ in its simplest form	Write $\big(j(g(x))\big)$ in its simplest form State this function's domain restrictions

Give a detailed sketch for $(f - j)(x)$	Give a detailed sketch for $\big(h(g(x))\big)$
	
Give a detailed sketch for $\big(h(f(x))\big)$	Give a detailed sketch for $(j(g(x))$
	

Explain the difference between the two compositions $\big(f(g(x))\big)$ and $\big(g(f(x))\big)$?