

Fill in the Blanks

Graphical Inequalities and Regions

$f(x)$ and $g(x)$	Sketch of $y = f(x)$ and $y = g(x)$	Coordinates of intersection(s)	Solutions to $f(x) \geq g(x)$	Shade the region given by:
$f(x) = 3x + 1$ $g(x) = 5 - x$		$(1, 4)$	$x \geq 1$	$y \geq 3x + 1$ $y \leq 5 - x$ and $x \geq 0$
$f(x) = 2x - \frac{1}{2}$ $g(x) = \frac{1}{3}x + 2$		$(\frac{3}{2}, \frac{5}{2})$	$x \geq \frac{3}{2}$	$y \geq 2x - \frac{1}{2}$ $y \leq \frac{1}{3}x + 2$ and $x \geq 0$ and $y \geq 0$
$f(x) = x^2$ $g(x) = x + 6$		$(-2, 4)$ and $(3, 9)$	$x \geq 3$ or $x \leq -2$	$y \geq x^2$ and $y \leq x + 6$
$f(x) = 1 - x^2$ $g(x) = x - 1$		$(-2, -3)$ and $(1, 0)$	$-2 \leq x \leq 1$	$y \leq 1 - x^2$ and $y \leq x - 1$
$f(x) = 4 - 2x$ $g(x) = x^2 + x - 6$		$(2, 0)$ and $(-5, 14)$	$x \leq -5$ or $x \geq 2$	$y \leq 4 - 2x$ and $y \leq x^2 + x - 6$
$f(x) = 4 - x^2$ $g(x) = 2x^2 + 4x$		$(-2, 0)$ and $(\frac{2}{3}, \frac{32}{9})$	$-2 \leq x \leq \frac{2}{3}$	$y \leq 4 - x^2$ and $y \geq 2x^2 + 4x$