2.7) Solving modulus problems

	Worked example	Your turn
(a) (b) (c)	$f(x) = 2 x + 1 - 3, x \in \mathbb{R}$ Sketch the graph of $y = f(x)$ State the range of f . Solve the equation $f(x) = \frac{1}{3}x + 2$	$p(x) = 3 x - 1 - 2, x \in \mathbb{R}$ (a) Sketch the graph of $y = p(x)$ (b) State the range of p . (c) Solve the equation $p(x) = \frac{1}{2}x + 3$
		(a) Sketch (b) $p(x) \ge -2$ (c) $x = -\frac{4}{7}, x = \frac{16}{5}$
	Craphs used with permission from [5 (-0.571, 2.714) (0,1) (0,1) (0,1) (1,-2) (1,-2)
Graphs used with permission from PESMOS: <u>https://www.desmos.com/</u>		

	Worked example	Your turn	
(a) (b) (c)	Worked example $f(x) = 6 - 2 x + 3 , x \in \mathbb{R}$ Sketch the graph of $y = f(x)$ State the range of f . Solve the inequality $f(x) > 5$	Your turn $p(x) = 6 - 2 x + 3 , x \in \mathbb{R}$ (a) Sketch the graph of $y = p(x)$ (b) State the range of p . (c) Solve the inequality $p(x) > 5$ (a) Sketch (b) $p(x) \le 6$ (c) $-\frac{7}{2} < x < -\frac{5}{2}$	
	Craphs used with permission from [DESMOS: http://www.dosmos.com/	
	Graphs used with permission from PESMOS: <u>https://www.desmos.com/</u>		

Worked example	Your turn
<pre>Worked example f(x) = 6 + 3 x - 2 , x ∈ ℝ State the range of values of k for which f(x) = k has: a. no solutions b. exactly one solution c. two distinct solutions</pre>	Your turn $h(x) = 6 - 2 x + 3 , x \in \mathbb{R}$ State the range of values of k for which $f(x) = k$ has: a) no solutions b) exactly one solution c) two distinct solutions a) $k > 6$ b) $k = 6$ c) $k < 6$ Output the fourth of
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