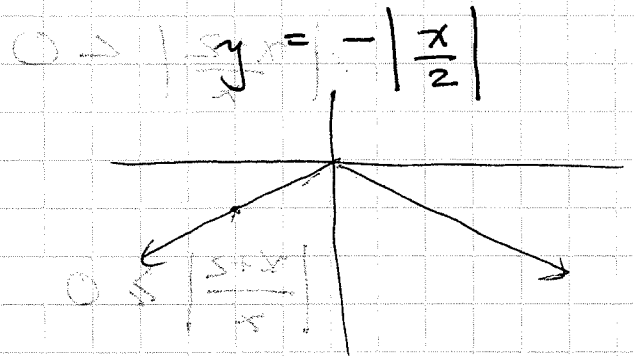
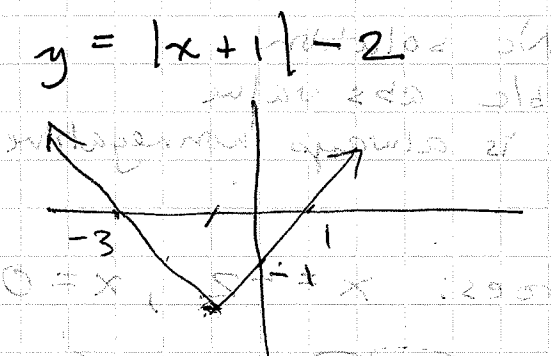


1. Sketch the absolute value functions. Label intercepts.



2. Solve for x . Be sure to check your solutions.

$|3x+1| = 4x$ or $3x+1 = 4x$ or $3x+1 = -4x$
 $x = 1$ or $x = -\frac{1}{7}$
 Both check

$|\frac{7-9x}{6}| \geq 1$ (Answer in interval or algebraic notation)

$\frac{7-9x}{6} \geq 1$ or $\frac{7-9x}{6} \leq -1$
 $9x \leq 7-6$ or $13 \leq 9x$
 $x \leq \frac{1}{9}$ or $x \geq \frac{13}{9}$

3. Solve the inequality. (Answer in interval or algebraic notation)

$2x^2 + x - 7 \leq x^2 - 5x$

$2x^2 - x^2 + x + 5x - 7 \leq 0$

$x^2 + 6x - 7 \leq 0$

$(x-1)(x+7) \leq 0$

$x = 1, -7$

Check intervals

$(-\infty, -7)$,

$(-7, 1)$,

$(1, \infty)$

Answer $[-7, 1]$

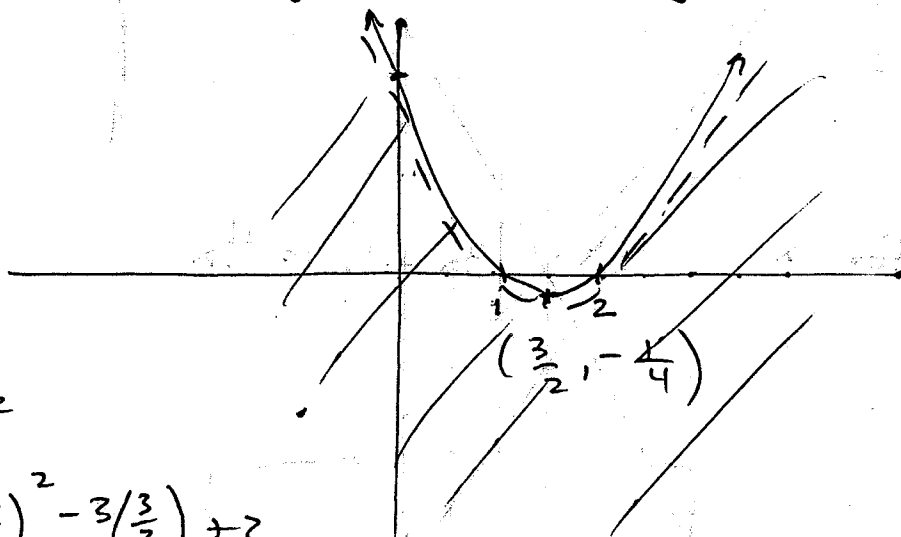
A problem I left off the quiz:
Solve. Answer in interval or algebraic notation.

$$x^2 - 3x + 2 > 0 \quad (-\infty, 1) \cup (2, \infty)$$

$$(x-2)(x-1) > 0 \quad x=2, 1$$

	$(-\infty, 1)$	$\{1\}$	$(1, 2)$	$\{2\}$	$(2, \infty)$
$x-2$	-	-	-	0	+
$x-1$	-	0	+	+	+
Prod > 0 ?	+	0	-	0	+
	✓	no	no	no	✓

Sketch the graph of the inequality, labeling any intercepts.



Vertex
 $x = 3/2$

$x = 3/2$ axis of symmetry

$(-\frac{b}{2a}, f(-\frac{b}{2a}))$ vertex

$$= (\frac{3}{2}, f(\frac{3}{2}))$$

$$= (\frac{3}{2}, -\frac{1}{4})$$

y-intercept: $f(0) = 2$

$$f(\frac{3}{2}) = (\frac{3}{2})^2 - 3(\frac{3}{2}) + 2$$

$$= \frac{9}{4} - \frac{9}{2} + 2$$

$$= \frac{9}{4} - \frac{18}{4} + \frac{8}{4}$$

$$= -\frac{1}{4}$$