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8.e) $j(x) = -2|4-2x|+1$

dom j : $\mathbb{R}$ (for all abs. value fn)

ran j : $]-\infty, 1]$ a -ve $k = 1$

extrema:

min = ϕ max = 1

Intercepts:

$j(0) = -2|4-2(0)|+1$

$= -2|4|+1$

$= -7$

y-int = -7

$0 = -2|4-2x|+1$

$-1 = -2|4-2x|$

$\frac{1}{2} = |4-2x|$

$4-2x = \frac{1}{2}$ $\quad -(4-2x) = \frac{1}{2}$

$-2x = -\frac{7}{2}$ $\quad 4-2x = -\frac{1}{2}$

$x = \frac{7}{4}$ $\quad -2x = -\frac{9}{2}$

$x = \frac{9}{4}$

x-int = $\{\frac{7}{4}, \frac{9}{4}\}$

Variation:

$|4-2x|$

$= |-2x+4|$

$= |-2(x-2)|$

$= 2|x-2|$ $\quad h = 2$ $\quad$ a -ve $\wedge$

$j \nearrow :]-\infty, 2]$

$j \searrow : [2, \infty[$

Sign:

x-int = $\{\frac{7}{4}, \frac{9}{4}\}$

test $x = 0$ $\quad j(0) = -7$

$j(x) \geq 0$ $\quad x : [\frac{7}{4}, \frac{9}{4}]$

$j(x) < 0$ $\quad x :]-\infty, \frac{7}{4}[\cup]\frac{9}{4}, \infty[$

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#10.b) $|3+5x|-4 \geq 6$

$|3+5x|-4 = 6$

$|3+5x| = 10$

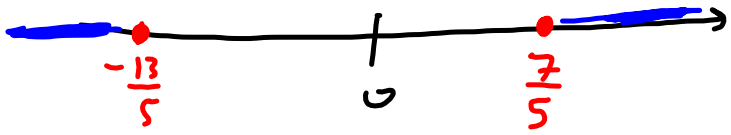
$3+5x = 10$ $\quad -(3+5x) = 10$

$5x = 7$ $\quad 3+5x = -10$

$x = \frac{7}{5}$ $\quad 5x = -13$

$x = -\frac{13}{5}$

Critical pts:



Test $x = 0$

$|3+5(0)|-4 \geq 6$

$3-4 \geq 6$

$-1 \geq 6$ ✗

$x:]-\infty, -\frac{13}{5}] \cup [\frac{7}{5}, \infty[$