

factor

1) $4n^2 - 8n - 140$

2) $5x^3 - 75x^2 + 250x$

3) $6a^4 + 42a^3 - 48a^2$

4) $6p^2 + 36p + 48$

$$\sqrt{36}$$

$$\sqrt[3]{48}$$

$$\sqrt{50}$$

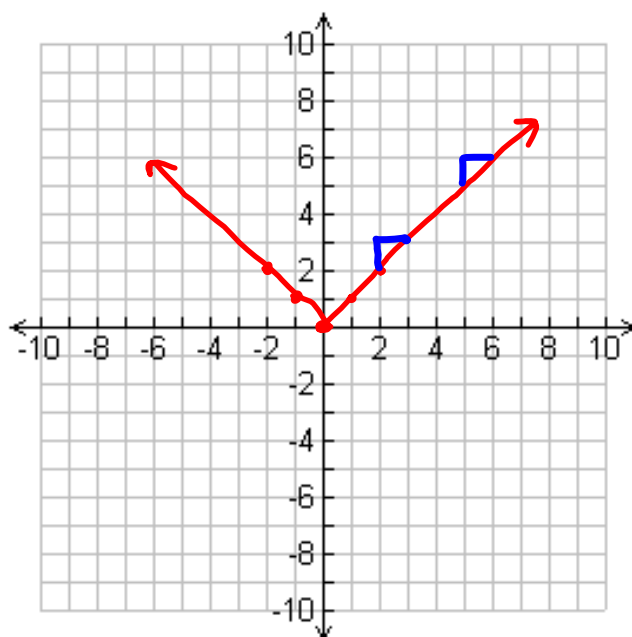
Absolute Value


8/17

$$y = |x|$$

← Slope

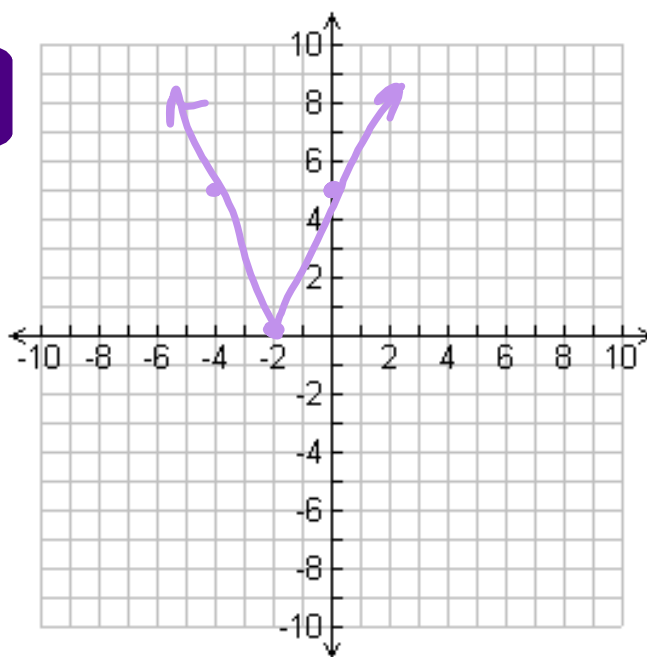
x	y
-2	2
-1	1
0	0
1	1
2	2





$$y = \frac{1}{2} |x + 2|$$

Left + 2

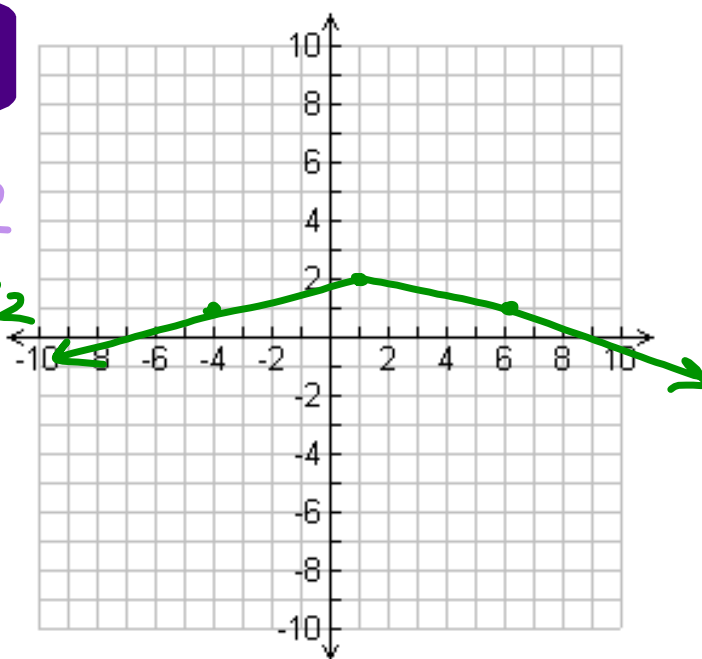




$$y = -\frac{1}{5}|x-1| + 2$$

↑ right
1

↑ 5/2



$$|-8 + r| = 7$$

① Isolate the absolute value
(Get rid of everything on the outside)

$$-8 + r = 7 \quad -8 + r = -7$$

+8 +8

$$r = 15 \quad r = 1$$

② Write 2 equations
* = positive answer
* = negative answer.

③ Solve both equations

$$\left| \frac{n}{7} \right| = 5$$

$$\cancel{\frac{n}{7}} = 5 \cdot 7 \quad \cancel{\frac{n}{7}} = -5 \cdot 7$$

$$n = 35 \quad n = -35$$

$$3. \frac{|-5 + k|}{3} = 1 \cdot 3$$

$$|-5 + k| = 3$$

$$-5 + k = 3$$

+5

$$k = 8$$

$$-5 + k = -3$$

+5

$$k = 2$$

$$-4|r - 1| = -8$$

* When you multiply or divide by a negative, flip the sign *

$$\frac{5|x-6|}{5} \leq \frac{25}{5}$$

$$|x-6| \leq 5$$

① Isolate the absolute value

② Write 2 inequalities

$$x-6 \leq 5 \quad x-6 \geq -5$$

* Same inequality and a positive answer

$$x-6 \leq 5 \quad x-6 \geq -5$$

+6 +6

* flip the inequality and negative answer.

$$x \leq 11 \quad x \geq 1$$

③ Solve

$$|-3p| - 10 > 2$$

+10

$$|-3p| > 12$$

$$\frac{-3}{-3} p > \frac{12}{-3}$$

$$p < -4$$

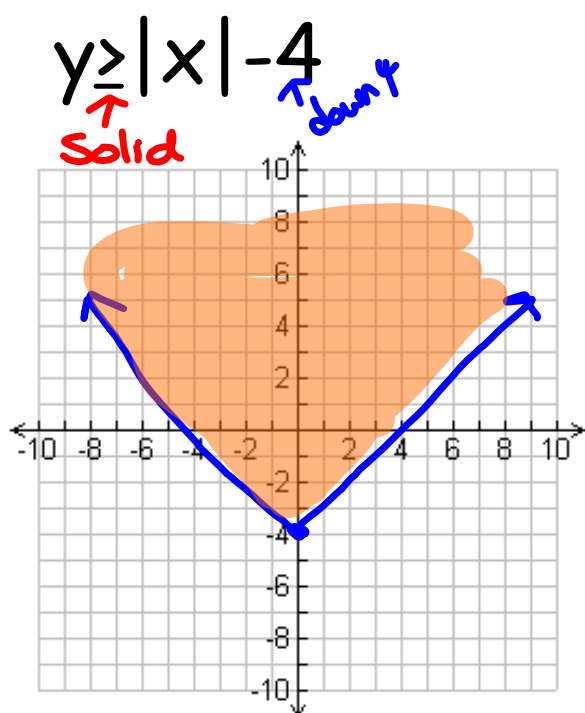
$$\frac{-3}{-3} p < \frac{-12}{-3}$$

$$p > 4$$

graphing inequalities

\leq and \geq **solid**

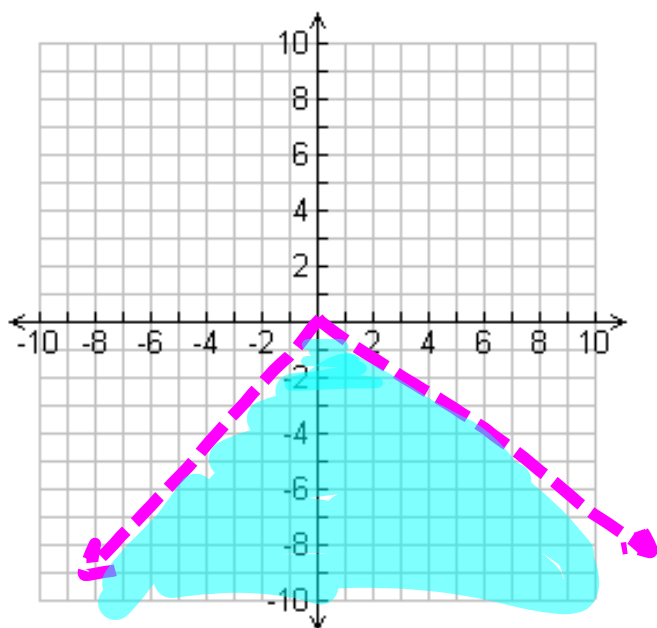
$<$ and $>$ **Dotted**



① Decide solid or dotted

② Graph using transformations

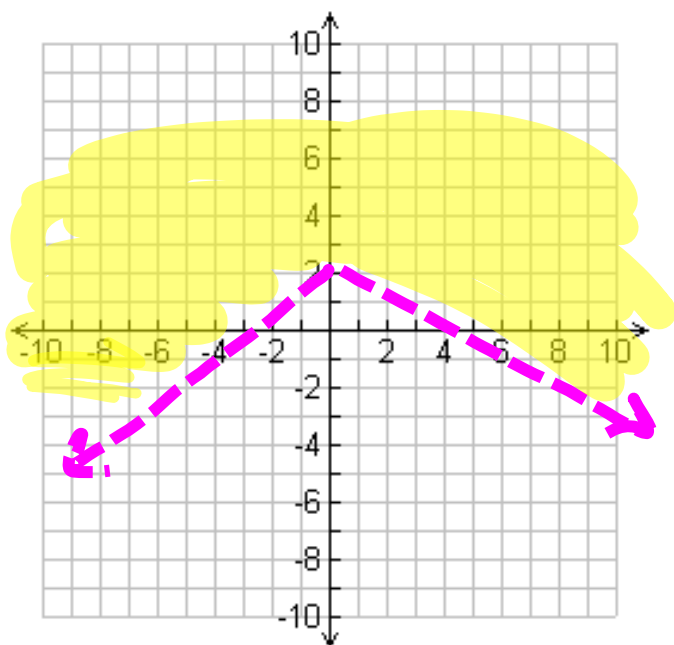
③ Shade
 $\geq, >$ above
 $\leq, <$ below



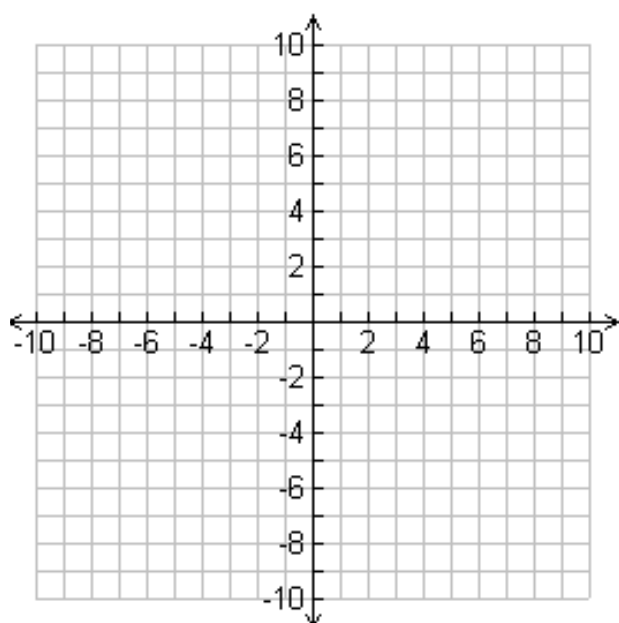
$$y < -|x|$$

dotted

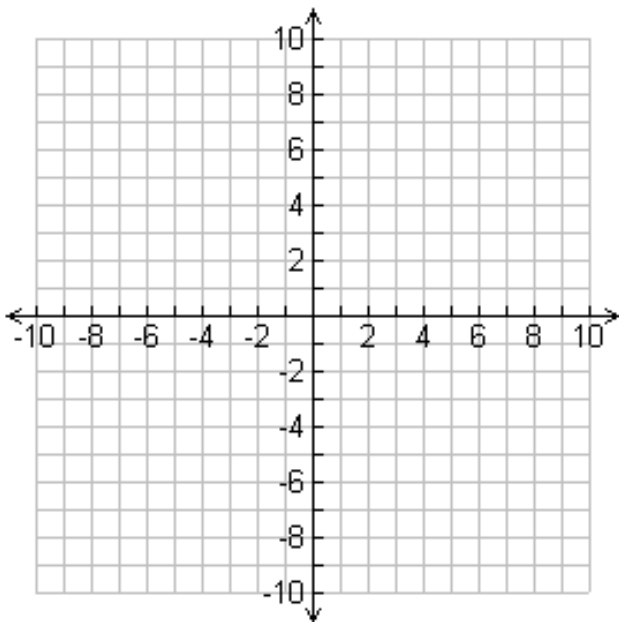
$$y > -|x| + \underline{\underline{2}}$$



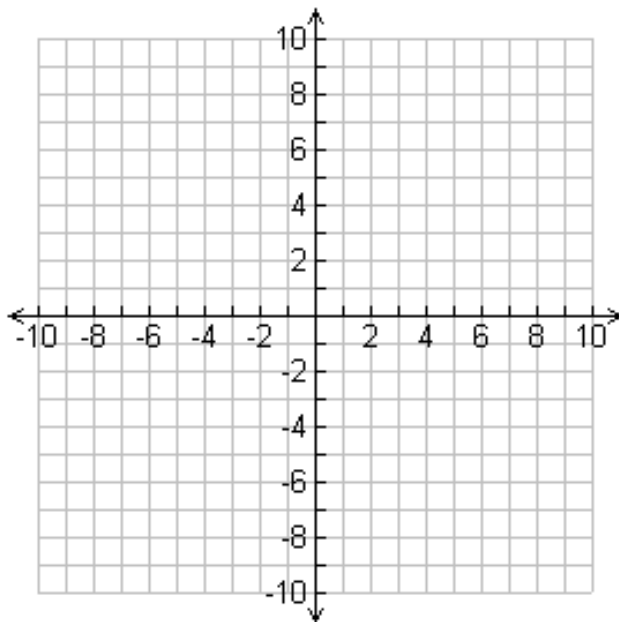
$$y \leq |x-2|+1$$



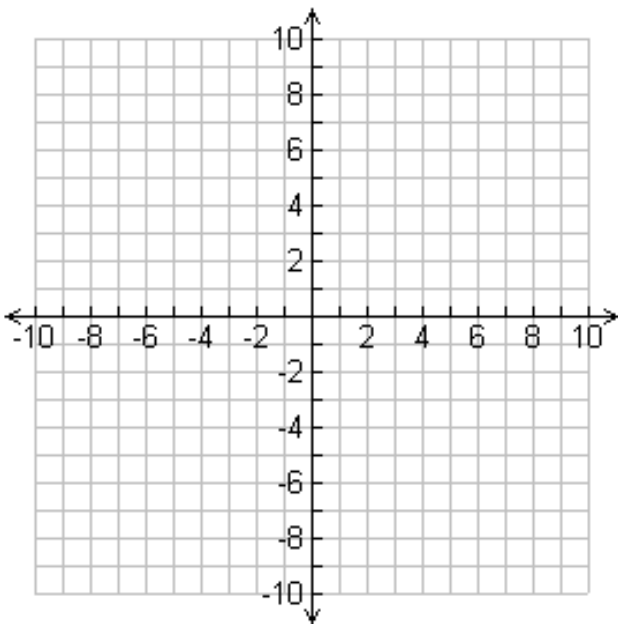
$$y < 2|x| - 1$$



$$y \geq \frac{1}{2}|x-2|+3$$

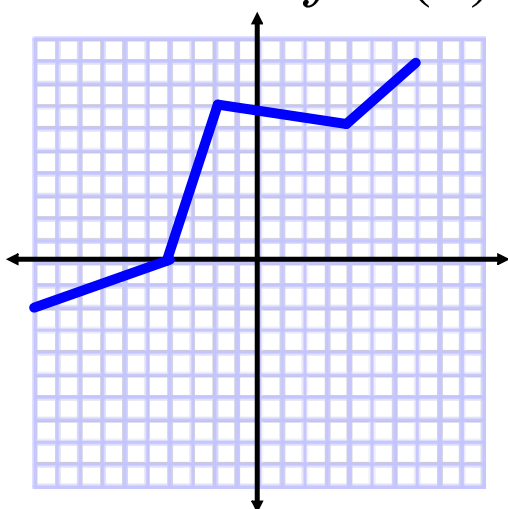


$$y > -3|x-2|+3$$



Inverse functions

$$f^{-1}(x)$$



$$f(x) = 2x + 1$$

$$f(x) = \frac{1}{3}x - 5$$

HOMEWORK

Worksheet