Warm-Up Solutions

CST/CAHSEE: Algebra 1

$$|2x \quad 3| = 5$$

$$2x ! 3 = 5$$
$$2x ! 3 + 3 = 5 + 3$$
$$2x = 8$$
$$\frac{2x}{2} = \frac{8}{2}$$
$$x = 4$$

$$2 \quad ! 3 = !5$$
$$2 \quad ! 3 + 3 = !5 + 3$$
$$2 \quad = !2$$
$$\frac{2}{2} = \frac{!2}{2}$$
$$= !1$$

Review: Algebra

$$\left| \quad +10 \right| = 12$$

$$x + \quad =$$
$$x + \quad ! \quad = \quad !$$
$$x =$$

$$+ \quad =$$

All About Absolute Value Functions

Graphing Absolute Value Functions:

Graph $|\ |$

5)

Solving Absolute Value Equations in One Variable:
Any equation in one variable can be rewritten as a system of two equations in two variables. We will explore solving absolute value equations by rewriting them as systems of equations.

Examples:
9) Solve $|\ |$ 3

All About Absolute Value Functions

Part 1: The Mother Function

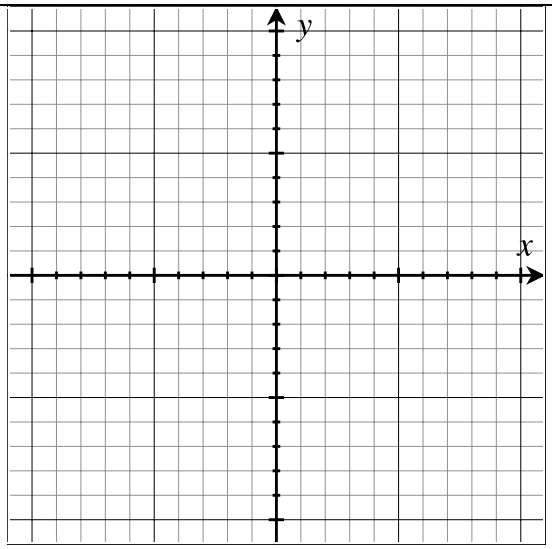
Graph the function below. Describe the graph. Write a sentence explaining why it takes the shape it does.

	$\left\| \right\|$

Part 2: Related Functions

Graph each function. Explain how it compares to the graph of the mother function.

1.	$= \left\| \right\| + 3$
2.	$\left\| \right\| \ 2$

3. 	$= \left\| \quad + 4 \right\|$
4.	$y \quad \left\| x - \right\|$
5.	$y = \left\| x + 3 \right\| \quad 4$

Summarize the function behavior you observed from the previous examples.

$\left\| \quad \right\|$: _____ $= \left\| \quad ! \quad \right\|$: _____

$y = |x| + b$: _____ $y = |x| - b$: _____

Backline Masters: Photocopy onto transparencies and cut out. Each student should be given one of each.