

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**ABSOLUTE VALUE AND STEP FUNCTIONS  
COMMON CORE ALGEBRA I HOMEWORK**

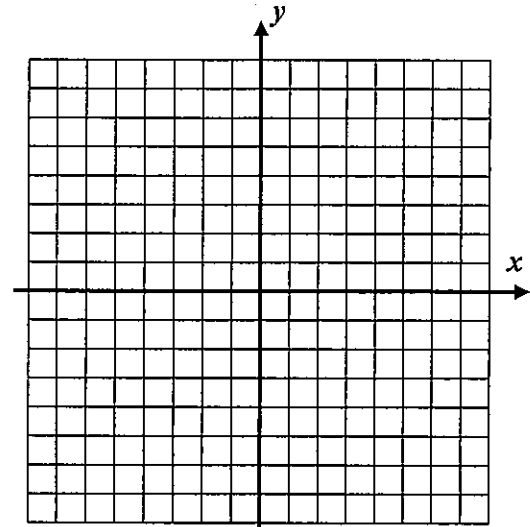
**FLUENCY**

1. Consider the absolute value function  $f(x) = |x+3|$  only on the interval  $-6 \leq x \leq 2$ .

(a) Evaluate  $f(-5)$  and  $f(2)$  without a calculator.

(b) Graph this function over the interval  $-6 \leq x \leq 2$ .  
Show your table below.

$x$	-6	-5	-4	-3	-2	-1	0	1	2
$y$									



(c) Over which of the following intervals is  $f(x)$  always increasing? Circle the correct choice.

- (1)  $-6 < x < -3$                       (3)  $-4 < x < 0$   
(2)  $-2 < x < 1$                         (4)  $-5 < x < 2$

(d) State the range of  $f(x)$  on this domain interval.

2. Are the two expressions  $|x-5|$  and  $|x|-5$  equivalent? Give evidence to support your yes or no answer. Remember, for expressions to be equivalent, they must have the same value for all values of the input variable,  $x$ .

