Math 200 - Quiz 7

April 7, 2010

Name key

Score _____

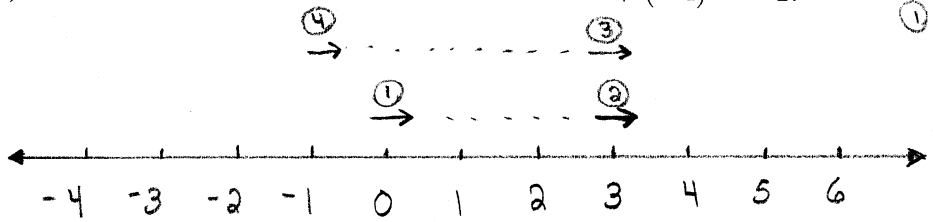
Show all work to receive full credit. Supply explanations when necessary.

1. (1 point) Use a pattern to show that $6 + (-2) = 4$.

$6+3 = 9$
$6+2 = 8$
$6+1 = 7$
$6+0 = 6$
$6+(-1) = 5$
$6+(-2) = 4$

SECOND ADDEND DECREASES BY 1 ⇒ SUM DECREASES BY 1

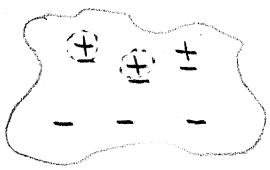
2. (1 point) Use the number line model to show that $3 + (-4) = -1$.



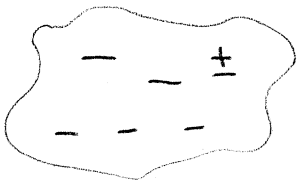
① START AT ZERO FACING RIGHT.
② MOVE FORWARD 3.
③ STAY FACING RIGHT.
④ MOVE BACKWARD 4.
END AT -1.

3. (1.5 points) Use the charged-field model to show that $-3 - 2 = -5$.

START WITH A FIELD WHOSE NET CHARGE IS -3



TAKE AWAY TWO POSITIVE CHARGES.



RESULTING FIELD HAS CHARGE -5.

4. (1.5 points) Describe any one of the estimation techniques that we have studied. Make up an example and show how your technique could be used to estimate the sum of six 3-digit numbers.

MAKING NICE (COMPATIBLE) NUMBERS : ESTIMATE THE NUMBERS TO MAKE "NICE" SUMS

$157 + 99 + 82 + 145 + 105$

$= \underbrace{157 + 145}_{\text{ABOUT 300}} + \underbrace{99 + 82 + 105}_{\text{ABOUT 300}} \approx 600$