Good luck to: Key Quiz 1 Block: A2 A3 A4 B2 B3 B4 Date: _____ ID: A

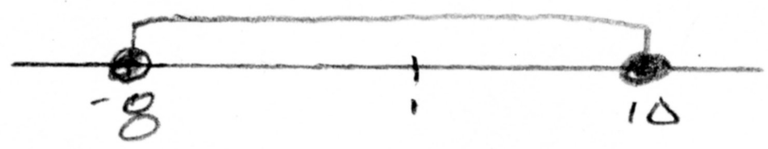
Introduction to Calculus Mr. Holcomb 2008/2009

Something that makes you smile: _____

Problem

1. (12 points) For the following, write an English sentence about numbers on the number line then describe the solution set using a number line and using interval notation if appropriate.

a. $|x-1| \le 9$ THE DISTANCE x IS FROM 1 IS LESS THAN OR EQUAL TO 9.

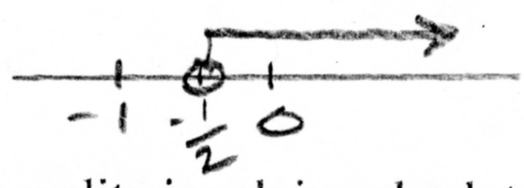


$[-8, 10]$ 6

b. $|x+1| > |x|$ THE DISTANCE x IS FROM -1 IS MORE THAN THE DISTANCE x IS FROM 0.

$|x-(-1)| > |x-0|$

x IS CLOSER TO ZERO THAN TO -1.



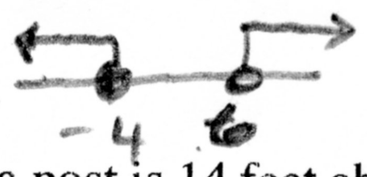
$(-\frac{1}{2}, +\infty)$ 6

2. (6 points) Find an inequality involving absolute value whose solution set is:

a. $[-7,0]$

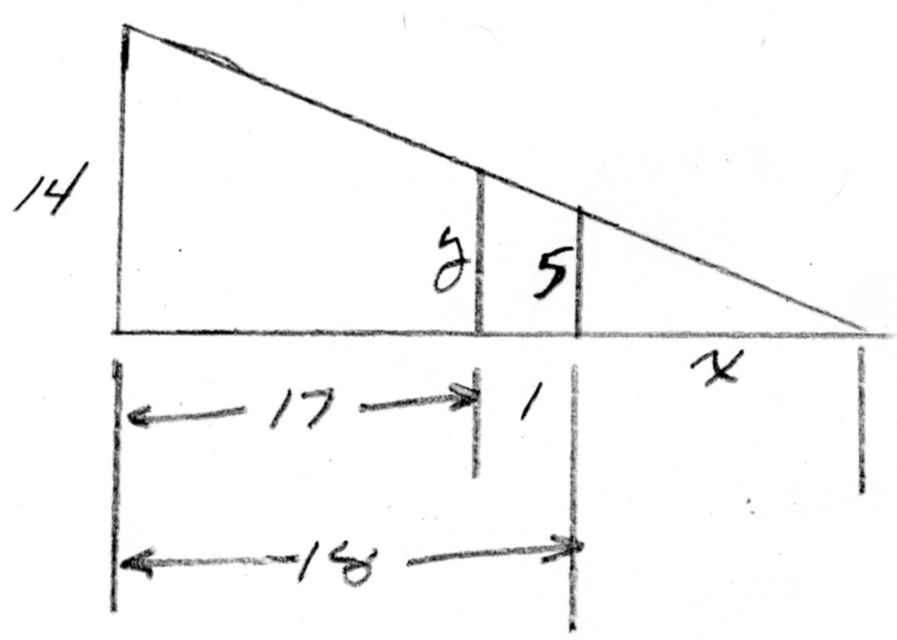
$|x+3\frac{1}{2}| \le 3\frac{1}{2}$ 3

b. $(-\infty,-4] \cup [6,+\infty)$



$|x-1| \ge 5$ 3

3. (10 points) A light on top of a post is 14 feet above the ground. Is it dark and a 5 foot tall woman is standing 18 feet from the post. A friend is standing 17 feet from the same post so that the tip of his shadow coincides with the tip of her shadow. What is his height? Include a labeled drawing to help support your answer.



$$\frac{14}{18+x} = \frac{5}{x}$$

$14x = 90 + 5x$

$9x = 90$

$x = 10$

$$\frac{14}{28} = \frac{y}{11}$$

$28y = 154$

$y = \frac{154}{28} = 5\frac{1}{2}$

HE IS $5\frac{1}{2}$' TALL.

Corrections Grade = _____

Total Points Earned = 28