Math 123
Quiz 2
Fall 2013

Name Key

Show All Work

1) The Consumer Price Index (CPI), which measures the cost of a typical package of consumer goods, stood at 168.8 in January 2000 and 211.1 in January 2008. Let x = 0 correspond to 2000, and estimate the CPI in 2005.

2000 → year 0 → 168.8
2008 → year 8 → 211.1

$$m = \frac{211.1 - 168.8}{8 - 0} = \frac{42.3}{8} \approx 5.29$$

$y = mx + b$
$y = 5.29x + 168.8$

In 2005
$y = (5.29)(5) + 168.8$
≈ 195.2

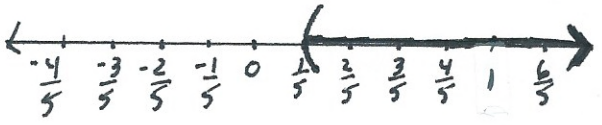
2) Solve each inequality and graph each solution..

a) $-5 - p \geq 3$

$-p \geq 8$
$p \leq -8$

b) $3p - 1 < 6p + 2(p - 1)$

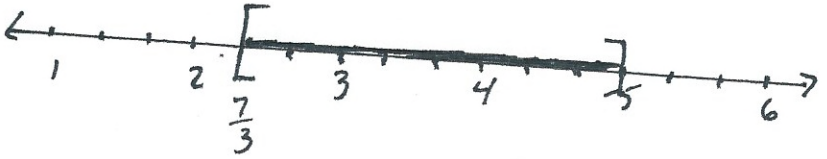
$3p - 1 < 6p + 2p - 2$
$3p - 1 < 8p - 2$
$-1 < 5p - 2$
$1 < 5p$
$\frac{1}{5} < p$
$p > \frac{1}{5}$



c) $8 \leq 3r + 1 \leq 16$

$7 \leq 3r \leq 15$

$\frac{7}{3} \leq r \leq 5$



d) $|3z + 1| > 4$

$3z+1 > 4$ or $3z+1 < -4$

$3z > 3$ $\qquad 3z < -5$

$z > 1$ OR $z < -5/3$