Name Key Date 9.13 Period ____

Topic 1 // 2.1 (Inequalities) // Practice C 2008-2009

A. Decide whether the number is a solution of the inequality. (Yes or No)

1) $3x + 5 \leq 20$, 4

$-5 \quad -5$

$\frac{3x}{3} \leq \frac{15}{3}$

$x \leq 5$ Yes $4 \leq 5$ ✓

2) $6 - 2y > 10$, -2

$-6 \quad -6$

$\frac{-2y}{-2} > \frac{4}{-2}$ "flip"

$y < -2$

$-2 < -2$ No

3) $-4 \leq w + 5$, -2

$-5 \quad -5$

$-9 \leq w$

$-9 \leq -2$ ✓

Yes

B. Solve and graph the following inequalities

4) $x - 3 < -6$

$+3 \quad +3$

$x < -3$

5) $2y + 1 \geq 7$

$-1 \quad -1$

$\frac{2y}{2} \geq \frac{6}{2}$

$y \geq 3$

6) $-6a - 5 > -8$

$+5 \quad +5$

$\frac{-6a}{-6} > \frac{-3}{-6}$ "flip" reduce

$a < \frac{1}{2}$

7) $5x - 3 \leq 2x + 6$

$-2x \quad +3 \quad -2x \quad +3$

$\frac{3x}{3} \leq \frac{9}{3}$

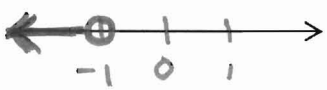
$x \leq 3$

8) $9 - 3k > 12$

$-9 \quad -9$

$\frac{-3k}{-3} > \frac{3}{-3}$

$k < -1$

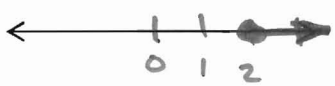


9) $-2x \geq -8x + 12$

$+8x \quad +8x$

$\frac{6x}{6} \geq \frac{12}{6}$

$x \geq 2$



10) $-\frac{1}{2}x - 5 < -2$

$+5 \quad +5$

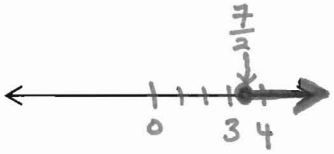
$\left(-\frac{2}{1}\right)\left(-\frac{1}{2}\right)x < 3\left(\frac{-2}{1}\right)$

$x > -6$

11) $2x - 7 \geq 0$

$+7 \quad +7$

$\frac{2x}{2} \geq \frac{7}{2}$



12) $9a + 4 \leq 12a - 11$

$-12a \quad -4 \quad -12a \quad -4$

$\frac{-3a}{-3} \leq \frac{-15}{-3}$

$a \geq 5$

13. $x - ax = -7$

$\frac{x(1-a)}{(1-a)} = \frac{-7}{(1-a)}$

$x = \frac{-7}{(1-a)}$

14. $z = xy^2 + 2x$

$\frac{z}{y^2+2} = \frac{x(y^2+2)}{y^2+2}$

$x = \frac{z}{y^2+2}$

*15. $b - x = 4x + ax$

$+x \quad +x$

$b = 5x + ax$

$\frac{b}{5+a} = \frac{x(5+a)}{5+a}$

$x = \frac{b}{5+a}$

C. Solve for the indicated variable.

16. Solve for h: $V = \pi r^2 h$

$\frac{V}{\pi r^2} = \frac{\pi r^2 h}{\pi r^2}$

$h = \frac{V}{\pi r^2}$

17. Solve for W: $P = 2L + 2W$

$-2L \quad -2L$

$\frac{P-2L}{2} = \frac{2W}{2}$

$W = \frac{P-2L}{2}$ or $\frac{1}{2}P - L = W$

18. Solve for A: $V = \frac{1}{3}Ah$

$3 \cdot V = \frac{1}{3}Ah \cdot 3$

$\frac{3V}{h} = \frac{Ah}{h}$

$A = \frac{3V}{h}$

19. Solve for b_2: $A = \frac{1}{2}h(b_1 + b_2)$

$2 \cdot A = \frac{1}{2}h(b_1 + b_2) \cdot 2$

$\frac{2A}{h} = \frac{h(b_1+b_2)}{h}$

$\frac{2A}{h} = b_1 + b_2$

$-b_1 \quad -b_1$

$b_2 = \frac{2A}{h} - b_1$

20. Solve for F: $\frac{9}{5}C = \frac{5}{9}(F-32)\frac{9}{5}$

$\frac{9}{5}C = F - 32$

$+32 \quad +32$

$F = \frac{9}{5}C + 32$

21. Solve for n: $m^2n - 3n = 8$

$\frac{n(m^2-3)}{m^2-3} = \frac{8}{m^2-3}$

$n = \frac{8}{m^2-3}$