Algebra I

Name: _____

Unit 2a Quiz Review

Solve each equation and justify each step using a property of equality.

1) $-21 = 3k + 4k$

$-21 = 7K$ Combine like Terms

$\boxed{-3 = K}$ Div POE

2) $-7(x + 7) = -84$

$-7x - 49 = -84$ Distributive Property

$-7x = -35$ Add POE

$\boxed{x = 5}$ Div POE

3) $2(1 + 7k) = -8(2k - 4)$

$2 + 14K = -16K + 32$ Distributive

$2 + 30K = 32$ Add POE

$30K = 30$ Sub POE

$\boxed{K = 1}$ Div POE

Solve each inequality.

4) $6 > 1 - 5n + 5$

$6 > -5n + 6$

$0 > -5n$

$0 < n$ $\boxed{n > 0}$

5) $115 \leq -5(1 - 3x)$

$115 \leq -5 + 15x$

$120 \leq 15x$

$8 \leq x$

$\boxed{x \geq 8}$

6) $-9 - 8x \leq 3(x + 8)$

$-9 - 8x \leq 3x + 24$

$-9 \leq 11x + 24$

$33 < 11x$

$3 < x$ $\boxed{x > 3}$

Literal Equations: Rewrite each equation in terms of the indicated (Letter).

7. $\frac{V}{WH} = \frac{LWH}{WH}$ (L) $\boxed{L = \frac{V}{WH}}$

8. $P = 2(L + W)$ (W)

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

9 $\frac{x + y}{3} = 5$ (x)

$x + y = 15$ $\boxed{x = 15 - y}$

10. $d = rt$ (r) $\boxed{r = \frac{d}{t}}$

11. $2x - 3y = 8$ (y)

$\frac{-3y}{-3} = \frac{8}{-3} - \frac{2x}{-3}$ $\boxed{y = -\frac{8}{3} + \frac{2}{3}x}$

10 $A = (1/2)h(b_1 + b_2)$ (b)

$2A = h(b_1 + b_2)$

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

Translating Word Problems to Equations & Inequalities

Set up the equation to represent the problem & solve. *NO CREDIT WITHOUT AN EQUATION!*

13. When 5 is added to three times a number, the result is 50. Find the number.

$3x + 5 = 50$

$3x = 45$

$x = 15$

14. The sum of 3 consecutive integers is 192. Find the 3 numbers.

$x + (x+1) + (x+2) = 192$

$3x + 3 = 192$

$3x = 189$

$x = 63$

63, 64, 65

15. You are trying to save $45 a week to buy a new video game. During the last 4 weeks you have saved $35, $55, $43, and $39. How much do you need to save this week to average $45 for the 5 weeks?

$\frac{35+55+43+39+x}{5} = 45$ $\quad \frac{172+x}{5} = 45$ $\quad 172 + x = 225$

$x = \$53$

16. The width of a rectangle is 14 inches more than the length. The perimeter is 120. Find the length and width of the rectangle.

$W = 14 + L$

$P = 2L + 2W$

$120 = 2L + 2(14 + L)$

$120 = 2L + 28 + 2L$

$120 = 4L + 28$

$4L = 92$

$L = 23$ in

$W = 37$ in

17. The sum of twice a number and nine is at most thirty-five. Solve to find the possible numbers. Write your answer as an inequality.

$2x + 9 \leq 35$

$2x \leq 26$

$x \leq 13$

18. Twelve subtracted from a number is greater than or equal to forty. Solve to find the possible numbers. Write your answer as an inequality.

$x - 12 \geq 40$

$x \geq 52$