Geom 1-2 (E)
Algebra Review - Part 1

Name: KEY

Period: ____

Change the following sentences into mathematical statements (expressions, equations, or inequalities).

1.) Five less than the square root of a number, y — $\sqrt{y} - 5$

2.) Twenty more than five times a number x is equal to one hundred. — $5x + 20 = 100$

3.) The difference between a and b is at least seventeen. — $a - b \geq 17$

4.) The cube of a number w is more than the sum of a number f and 2. — $w^3 > f + 2$

5.) The quotient of sixteen and the product of h and k. — $\frac{16}{hk}$

Simplify the following expressions.

6.) $17 - 4 + 3^2$

$17 - 4 + 9$

$13 + 9$

$\boxed{22}$

7.) $\sqrt{10^2 - 8^2}$

$\sqrt{100 - 64}$

$\sqrt{36}$

$\boxed{6}$

8.) $\frac{4 - 5 \cdot 4}{-2^2}$

$\frac{4 - 5 \cdot 4}{-4}$

$\frac{4 - 20}{-4}$

$\frac{-16}{-4}$

$\boxed{4}$

9.) $7 - 2(4^2 \div 8 \cdot 2)$

$7 - 2(16 \div 8 \cdot 2)$

$7 - 2(2 \cdot 2)$

$7 - 2(4)$

$7 - 8$

$\boxed{-1}$

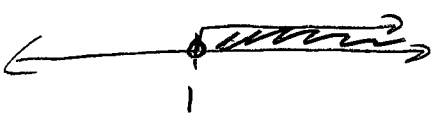
Solve the following inequalities and graph the solutions on a number line.

10.) $-17 + 4x \geq -13$

$+17 \quad +17$

$\frac{4x}{4} \geq \frac{4}{4}$

$x \geq 1$

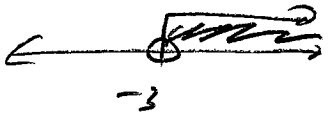


11.) $-2x + 7 < 13$

$-7 \quad -7$

$\frac{-2x}{-2} < \frac{6}{-2}$

$x > -3$



12.) $6x - 12 \geq 10x + 20$

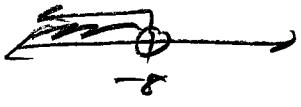
$-10x \quad -10x$

$-4x - 12 \geq 20$

$+12 \quad +12$

$\frac{-4x}{-4} \geq \frac{32}{-4}$

$x \leq -8$



Solve the equations. If your answer is not an integer, express it as reduced fraction.

13.) $5p-14=8p+4$

$-3p=18$

$p=-6$

14.) $p-1=5p+3p-8$

$-7p=-7$

$p=1$

15.) $-(1+7x)-6(-7-x)=36$

$-1-7x+42+6x=36$

$-1x=-5$

$x=5$

16.) $5x-3(2x+7)=12$

$5x-6x-21=12$

$-x=33$

$x=-33$

17.) $-3(4x+3)+4(6x+1)=43$

$-12x-9+24x+4=43$

$12x=48$

$x=4$

18.) $\frac{2}{3}(6w-9)=-(2w-5)$

$4w-6=-2w+5$

$6w=11$

$w=\frac{11}{6}$ or $1\frac{5}{6}$

19.) $180-y=5(90-y)$

$180-y=450-5y$

$4y=270$

$y=67\frac{1}{2}$

20.) $g+(2g+1)+(3g-7)=180$

$6g-6=180$

$6g=186$

$g=31$

21.) $\frac{4}{9}=\frac{r-3}{6}$

$9(r-3)=4\cdot 6$

$9r-27=24$

$9r=51$

$r=\frac{51}{9}$ or $\frac{17}{3}$ or $5\frac{2}{3}$

22.) $\frac{n-6}{n-7}=\frac{9}{2}$

$2(n-6)=9(n-7)$

$2n-12=9n-63$

$-7n=-51$

$n=\frac{51}{7}$ or $7\frac{2}{7}$