Principles of Algebra Name/Date Clee / Today

ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET

WS 3E.2 – More Solving Simple Inequalities

#1-10, Solve each inequality and graph the solution set on a number line.

1. $2(n+1) > 15$

$2n + 2 > 15$

$2n > 13$

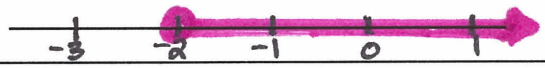
$\boxed{n > \frac{13}{2}}$ (6.5)

2. $4x + 5 - 6x \leq 9$

$-2x + 5 \leq 9$

$-2x \leq 4$ FLIP!

$\boxed{x \geq -2}$



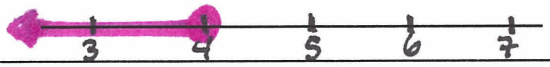
3. $9m - 4 \leq 12 + 5m$

$-5m \quad -5m$

$4m - 4 \leq 12$

$4m \leq 16$

$\boxed{m \leq 4}$



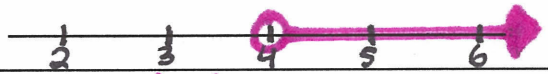
4. $2h - 4(h-3) < 4$

$2h - 4h + 12 < 4$

$-2h + 12 < 4$

$-2h < -8$ FLIP!

$\boxed{h > 4}$



5. $17 - (4x - 2) > 2(x + 3)$

$17 - 4x + 2 > 2x + 6$

$-4x + 19 > 2x + 6$

$-2x \quad -2x$

$-6x + 19 > 6$

$-6x > -13$ FLIP!

$\boxed{x < \frac{13}{6}}$ (2.16)

6. $5d - \frac{3d+8}{2} \leq -4 + \frac{7d}{2}$ ·2 ·2 ·2 ·2

$10d - 3d - 8 \leq -8 + 7d$

$7d - 8 \leq -8 + 7d$

$-7d \quad -7d$

$-8 \leq -8$ ← True statement

$\boxed{\text{All real numbers are solutions.}}$ (no need to graph)

7. $5-(1-r)-2(r+7)>-10r$

$5-1+r-2r-14>-10r$

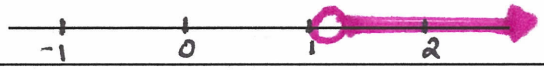
$-10-r>-10r$

$+10r \quad +10r$

$-10+9r>0$

$9r>10$

$\boxed{r>\frac{10}{9}}$ $(1.\overline{1})$



8. $\frac{1}{2}n-\frac{1}{8}>\frac{3}{4}+\frac{6}{5}n$ $\quad$ ·40 ·40 ·40 ·40

$20n-5>30+48n$

$-48n \quad -48n$

$-28n-5>30$

$-28n>35$

$\downarrow$ FLIP!

$n<\frac{35}{-28}$

$\boxed{n<-\frac{5}{4}}$ (-1.25)

9. $y-[y-(y-4)]\leq 3-[4-3(2y+8)]$

$y-[y-y+4]\leq 3-[4-6y-24]$

$y-y+y-4\leq 3-4+6y+24$

$y-4\leq 23+6y$

$-6y \quad -6y$

$-5y-4\leq 23$

$-5y\leq 27$ FLIP!

$\downarrow$

$\boxed{y\geq -\frac{27}{5}}$ (-5.4)

10. $-2\{-2[-2(2-z)]\}>-16+8z$

$-2\{-2[-4+2z]\}>-16+8z$

$-2\{8-4z\}>-16+8z$

$-16+8z>-16+8z$

$-8z \quad -8z$

False statement $\rightarrow -16>-16$

No solution (no need to graph)