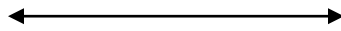
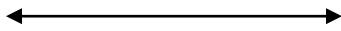


Solve & graph (by shading the number line) each “single” inequality.

1) $3y - 11 < 5y + 17$

2) $\frac{3n+7}{-4} \geq 8$

3) $4(9 - 5y) + 8y > -12y$

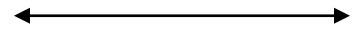
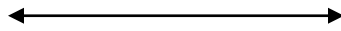
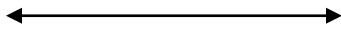


Solve & graph the absolute value (compound) inequality. Don't forget to separate it into *two* versions.

4) $|x + 2| \leq 8$

5) $|2x - 9| > 11$

6) $\left| \frac{1}{2}x - 4 \right| < -1$



Solve each inequality using sign analysis. Your options for any problems that are not “pre-factored” are: 1) factor (GCF, regular, grouping) 2) quadratic substitution and 3) p's & q's.

7) $(x + 2)(x - 1) \leq 0$

8) $(4 - x)(x - 3)^2(x + 5) > 0$

9) $x^3 + 9x \geq 0$

10) $x^4 - 7x^2 < -6$

11) $x^3 + 3x^2 - 13x - 15 \geq 0$

12) $4x^3 - x^2 - 20x + 5 < 0$

Name the restrictions for each inequality. Do not solve! Also, as always, when in doubt...

13) $\frac{17}{(x-8)(x+2)^2} \leq 0$

$x \neq \underline{\hspace{2cm}}$

14) $\frac{2y+5}{3y^2-9y} > 0$

$y \neq \underline{\hspace{2cm}}$

15) $\frac{r}{3r^2+31r-22} \geq 0$

$r \neq \underline{\hspace{2cm}}$

Solve each rational inequality using sign analysis. Don't forget to include the restrictions on your number line.

16) $\frac{(x-2)(x+2)}{x-5} > 0$

17) $\frac{x^2}{(x-1)(x+6)^2} \leq 0$

18) $\frac{7x-28}{x} \geq 0$

19) $\frac{x+9}{x^2+4x-21} < 0$