

Complete as many of the following problems as you can. You do not have to go in order. You can use a calculator to check your work but not to solve the problems.

If **your entire table** finishes early, you may leave early.

(1) Use interval notation to express the solution set and graph the set on a number line.

(a)  $5x + 3 > 23$

(c)  $6(x + 1) + 4 \geq 5x + 17$

(b)  $2x + 4 > 10$

(d)  $\frac{x}{3} - \frac{1}{12} \leq \frac{x}{4} + 1$

(2) Solve the compound inequalities and give your answer in interval notation:

(a)  $-3 \leq x - 2 \leq 5$

(c)  $7x - 9 > -23$  and  $5x + 8 < 23$

(b)  $5 < x + 5 < 8$

(d)  $-5x + 6 \geq 21$  or  $-7x - 5 < 9$

(3) Solve the absolute value equations:

(a)  $2|5x - 1| - 3 = 9$

(b)  $|2x - 5| = |x - 4|$

Key:

(1) (a)  $(4, \infty)$

(b)  $(3, \infty)$

(c)  $[7, \infty)$

(d)  $(-\infty, 13]$

(2) (a)  $[-1, 7]$

(b)  $(0, 3)$

(c)  $(-2, 3)$

(d)  $(-\infty, -3] \cup (-2, \infty)$

(3) (a)  $x = -1$  or  $x = \frac{7}{5}$

(b)  $x = 1$  or  $x = 3$