

Solve the following inequalities. Write your solution in interval form **AND** sketch it graphically on the number line. Keep this worksheet with your homework for Homework Checks. [Odd-numbered answers are on the back.]

1.  $(2x + 4)(x - 3) > 0$

2.  $x^2 - 3x - 18 \leq 0$

3.  $x^2 + 4x + 4 \geq 0$

4.  $x^2 - 9 < 0$

5.  $2x^2 + x \geq 1$

6.  $(x + 2)^2(x - 5)(x + 6) < 0$

7.  $\frac{3x-6}{x+4} < 0$

8.  $\frac{(x-3)^2}{x-1} \geq 0$

9.  $\frac{3+x}{3-x} \geq 1$

10.  $\frac{x^2-4}{x^2+4} \geq 0$

11.  $\frac{(x-1)^2}{(x+1)(x+2)} > 0$

(1).  $(-\infty, -2) \cup (3, \infty)$  (3).  $(-\infty, \infty)$  (5).  $(-\infty, -1] \cup [\frac{1}{2}, \infty)$  (7).  $(-4, 2)$  (9).  $[0, 3)$  (11).  $(-\infty, -2) \cup (-1, 1) \cup (1, \infty)$

[Don't forget to sketch your solutions, too.]