

## Intermediate Algebra Skill

### Solving Polynomial Inequalities: Polynomial Expression Already Factored; RHS 0

Solve the following Polynomial Inequalities:

1)  $w(w-1) \leq 0$

2)  $2w(w-2)(w+2) < 0$

3)  $3w^2(w-3)(w+3) > 0$

4)  $5w^2(w-4)(w+4) \geq 0$

5)  $p(p^2+1)(p-1)(p+1) > 0$

6)  $p(p-2)(p+2)(p^2+4) \geq 0$

7)  $p^2(2-3p)(2+3p)(4+9p^2) \leq 0$

8)  $2p^2(2-p)(2+p)(4+p^2) < 0$

9)  $m(m+3)(m-4) \geq 0$

10)  $m(m+3)(m-5) > 0$

11)  $m^2(m-1)(m-4) < 0$

12)  $m^2(m+5)(m-7) \leq 0$

**Answers to Solving Polynomial Inequalities: Polynomial Expression Already Factored; RHS 0**

1)  $(-\infty, -1] \cup [0, 1]$

2)  $(-\infty, -2) \cup (0, 2)$

3)  $(-\infty, -3) \cup (3, \infty)$

4)  $(-\infty, -4] \cup [4, \infty) \cup \{0\}$

5)  $(-1, 0) \cup (1, \infty)$

6)  $[-2, 0] \cup [2, \infty)$

7)  $\left(-\infty, -\frac{2}{3}\right] \cup \left[\frac{2}{3}, \infty\right) \cup \{0\}$

8)  $(-\infty, -2) \cup (2, \infty)$

9)  $[-3, 0] \cup [4, \infty)$

10)  $(-3, 0) \cup (5, \infty)$

11)  $(1, 4)$

12)  $[-5, 7]$