

Intermediate Algebra Skill

Solving Polynomial Inequalities: Polynomial Expression Not Factored; RHS 0

Solve the following Polynomial Inequalities:

1) $w^2 - w \leq 0$

2) $2w^3 - 8w < 0$

3) $3w^4 - 27w^2 > 0$

4) $5w^4 - 80w^2 \geq 0$

5) $p^5 - p > 0$

6) $p^5 - 16p \geq 0$

7) $16p^2 - 81p^6 \leq 0$

8) $32p^2 - 2p^6 < 0$

9) $m^3 - m^2 - 12m \geq 0$

10) $m^3 - 2m^2 - 15m > 0$

11) $m^4 - 5m^3 + 4m^2 < 0$

12) $m^4 - 2m^3 - 35m^2 \leq 0$

13) $y^3 - y^2 - 4y + 4 > 0$

14) $y^3 - 2y^2 - 9y + 18 \geq 0$

15) $2y^3 - y^2 - 2y + 1 \leq 0$

Answers to Solving Polynomial Inequalities: Polynomial Expression Not 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) $[-5, 7]$

13) $(-2, 1) \cup (2, \infty)$

14) $[-3, 2] \cup [3, \infty)$

15) $(-\infty, -1] \cup \left[\frac{1}{2}, 1\right]$