

Algebra 3 Assignment # 2

(1) Solve for x please.

(a) $5x^2 - 3x + 4 = 0$

(b) $3x^2 + 8x - 1 = 0$

(2) Solve each of the following inequalities please.

(a) $x^2 - 2x - 15 > 0$

(b) $4x^2 - 15x - 4 \leq 0$

(c) $x^2 + 2x - 7 \geq 0$

(d) $(2x - 7)(x + 3) \leq (x + 7)(x - 3)$

(e) $x^3 + x^2 - 4x - 4 < 0$

(f) $\frac{3x - 5}{2x + 3} \geq 0$

(g) $\frac{(x + 5)(x - 1)^2}{(x + 3)^3} \leq 0$

(3) Solve for x please.

(a) $x^4 - 25x^2 + 144 = 0$

(b) $x^{\frac{2}{3}} - 6x^{\frac{1}{3}} + 5 = 0$

(c) $(x^2 - 3x)^2 - 2(x^2 - 3x) - 8 = 0$

(d) $x^2 - 3\sqrt{3}x - 30 = 0$

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Answers

(1) (a) $\frac{3 \pm \sqrt{71} i}{10}$

(b) $\frac{-4 \pm \sqrt{19}}{3}$

(2) (a) $x < -3$ or $x > 5$

(b) $-\frac{1}{4} \leq x \leq 4$

(c) $x \leq -1 - 2\sqrt{2}$ or $x \geq -1 + 2\sqrt{2}$

(d) $0 \leq x \leq 5$

(e) $x < -2$ or $-1 < x < 2$

(f) $x < -\frac{3}{2}$ or $x \geq \frac{5}{3}$

(g) $-5 \leq x < -3$ or $x = 1$

(3) (a) $\pm 3, \pm 4$

(b) $1, 125$

(c) $\pm 1, 2, 4$

(d) $-2\sqrt{3}, 5\sqrt{3}$