

Phương trình vô tỉ (1)

Bài 1: Giải các phương trình sau:

a) $\sqrt{3x-1} + \sqrt{2-x} = 3$

b) $\sqrt{x^2-6x+6} = 2x-1$

c) $\sqrt{x+8} - \sqrt{5x-20} + 2 = 0$

d) $\sqrt{x+3} + \sqrt{x-1} = 2$

e) $\sqrt{2x+3} + \sqrt{5-8x} = \sqrt{4x+7}$

Bài 2: Giải các phương trình sau:

a) $x^2 - 6x + 9 = 4\sqrt{x^2 - 6x + 6}$

b) $\sqrt{(x-3)(8-x)} + 26 = -x^2 + 11x$

c) $(x+4)(x+1) - 3\sqrt{x^2 + 5x + 2} = 6$

d) $(x+5)(2-x) = 3\sqrt{x^2 + 3x}$

e) $x^2 + \sqrt{x^2 + 11} = 31$

f) $x^2 - 2x + 8 - 4\sqrt{(4-x)(x+2)} = 0$

Bài 3: Giải các phương trình sau:

a) $2\sqrt{x^2-4} - 3 = 6\sqrt{x-2} - \sqrt{x+2}$

b) $2\sqrt{x+3} + \sqrt{2x(3x+1)} = 2\sqrt{2x} + \sqrt{3x^2+10x+3}$

c) $\sqrt{x^2-3x+2} + \sqrt{x+3} = \sqrt{x-2} + \sqrt{x^2+2x-3}$

d) $\sqrt{x^2+10x+21} = 3\sqrt{x+3} + 2\sqrt{x+7} - 6$

e) $14\sqrt{x+35} + 6\sqrt{x+1} = 84 + \sqrt{x^2+36x+35}$

Bài 4: Giải các phương trình sau:

a) $\sqrt{x+3} + \sqrt{6-x} = 3 + \sqrt{(x+3)(6-x)}$

b) $\sqrt{2x+3} + \sqrt{x+1} = 3x + 2\sqrt{(2x+3)(x+1)} - 16$

c) $\sqrt{x-1} + \sqrt{3-x} - \sqrt{(x-1)(3-x)} = 1$

d) $\sqrt{7-x} + \sqrt{2+x} - \sqrt{(7-x)(2+x)} = 3$

e) $\sqrt{x+1} + \sqrt{4-x} + \sqrt{(x+1)(4-x)} = 5$

f) $\sqrt{3x-2} + \sqrt{x-1} = 4x - 9 + 2\sqrt{3x^2 - 5x + 2}$

g) $1 + \frac{2}{3}\sqrt{x-x^2} = \sqrt{x} + \sqrt{1-x}$

h) $\sqrt{x} + \sqrt{9-x} = \sqrt{-x^2+9x+9}$

Bài 5: Giải các phương trình sau:

a) $\sqrt{x+1} - \sqrt{x-1} = 1$

b) $\sqrt{3x+7} - \sqrt{x+1} = 2$

c) $\sqrt{x^2+9} - \sqrt{x^2-7} = 2$

d) $\sqrt{3x^2+5x+8} - \sqrt{3x^2+5x+1} = 1$

e) $\sqrt[3]{1+\sqrt{x}} + \sqrt[3]{1-\sqrt{x}} = 2$

f) $\sqrt{x^2+x-5} + \sqrt{x^2+8x-4} = 5$

g) $\sqrt[3]{5x+7} - \sqrt[3]{5x-13} = 1$

h) $\sqrt[3]{9-\sqrt{x+1}} + \sqrt[3]{7+\sqrt{x+1}} = 4$

Phương trình vô tỉ (2)

$$1) x^2 + 2x + 7 = 3\sqrt{(x^2 + 1)(x + 3)}$$

$$3) \sqrt{x+4} + \sqrt{5-x} - \sqrt{-x^2+x+20} = 3$$

$$5) (x-1)(x+2) - (x-1)\sqrt{\frac{x+2}{x-1}} - 2 = 0$$

$$7) (x+4)(x+1) - 3\sqrt{x^2+5x+2} = 6$$

$$9) (x+3)\sqrt{10-x^2} = x^2 - x - 12$$

$$11) x^2 + 2010x + 2011 = (x + 2010)\sqrt{x^2 + 2011}$$

$$13) \sqrt{x+3} + \sqrt{1-x} + 8\sqrt{(x+3)(1-x)} = 2$$

$$15) \sqrt{x^2 - 3x + 3} + \sqrt{x^2 - 3x + 6} = 2$$

$$17) \sqrt{2x^2 + x} + \frac{1}{\sqrt{x}} = \sqrt{2x+1} + 1$$

$$19) x^2 - 4x - 6 = \sqrt{2x^2 - 8x + 12}$$

$$2) 3\sqrt{x^2 - 2x - 3} = 7 - x^2 + 2x$$

$$4) x(x+5) = 2\sqrt[3]{x^2 + 5x - 2} - 2$$

$$6) \sqrt{2-x} + \sqrt{2+x} + \sqrt{4-x^2} = 2$$

$$8) \sqrt{x+1} + \sqrt{8-x} + \sqrt{(1+x)(8-x)} = 3$$

$$10) \sqrt{4x^2 - 1} + \sqrt{x} = \sqrt{2x^2 - x} + \sqrt{2x+1}$$

$$12) 2(x^2 - 2x) + \sqrt{x^2 - 2x - 3} - 9 = 0$$

$$14) \sqrt{3x-2} + \sqrt{x-1} = 4x - 9 + 2\sqrt{3x^2 - 5x + 2}$$

$$16) x^2 + 3x + 1 = (x+3)\sqrt{x^2+1}$$

$$18) 2 + \sqrt{6x^2 - x - 1} = \frac{\sqrt{3x+1}}{x} + 2x\sqrt{2x-1}$$

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