

$$5) \sqrt{|x-3|+2}=3$$

$$|x-3|+2=9$$

$$|x-3|=7$$

$$1) x-3=7$$

$$x=10$$

$$2) 3-x=7$$

$$x=-4$$

Ответ: 10; -4

$$6) 2x + \sqrt{34-5x} = 7$$

$$\sqrt{34-5x} = 7-2x$$

$$7-2x \geq 0$$

$$34-5x = (7-2x)^2$$

$$34-5x = 49-28x+4x^2$$

$$4x^2-23x+15=0$$

$$D=529-240=289$$

$$x_1 = (23+17)/8 = 5$$

$$x_2 = (23-17)/8 = 6/8 = 3/4$$

Ответ: 3/4

$$9) |x-7| = 2\sqrt{2x-8} - 3$$

$$7) x = \sqrt{x+1}$$

$$x \geq 0$$

$$x+1 = x^2$$

$$x^2 - x - 1 = 0$$

$$D = 1 + 4 = 5$$

$$x_1 = (1 + \sqrt{5})/2$$

$$x_2 = (1 - \sqrt{5})/2$$

Ответ: $(1 + \sqrt{5})/2$

$$8) \sqrt{3x^2 - 6x + 16} = 2x - 1$$

$$2x - 1 \geq 0$$

$$2x \geq 1$$

$$x \geq 1/2$$

$$3x^2 - 6x + 16 = (2x - 1)^2$$

$$3x^2 - 6x + 16 = 4x^2 - 4x + 1$$

$$3x^2 - 6x + 16 - 4x^2 + 4x - 1 = 0$$

$$-x^2 - 2x + 15 = 0$$

$$x^2 + 2x - 15 = 0$$

$$x_1 = -5$$

$$x_2 = 3$$

Ответ: 3

$$9) |x-7| = 2\sqrt{2x-8} - 3$$

$$(|x-7|+3)/2 = \sqrt{2x-8}$$

$$(|x-7|+3)/2 \geq 0$$

$$1) x > 7$$

$$2x-8 = (x-7+3)^2/4$$

$$2x-8 = (x-4)^2/4$$

$$2x-8 = (x^2-8x+16)/4$$

$$4(2x-8) = x^2-8x+16$$

$$8x-32 = x^2-8x+16$$

$$x^2-8x+16+32-8x=0$$

$$x^2-16x+48=0$$

$$x_1 = 12$$

$$x_2 = 4$$

$$2) x \leq 7$$

$$2x-8 = (-x+7+3)^2/4$$

$$2x-8 = (10-x)^2/4$$

$$2x-8 = (100-20x+x^2)/4$$

$$4(2x-8) = (100-20x+x^2)$$

$$8x-32 = 100-20x+x^2$$

$$100-20x+x^2-8x+32=0$$

$$x^2-28x+132=0$$

$$x_1 = 22$$

$$x_2 = 6$$

Ответ: 12; 6