*Задания В - 3*

**МОУ СОШ №8 с.Левокумка**
**Долгова О.А. учитель математики**

$$2^{4-2x} = 64$$

$$2^{4-2x} = 2^6$$
$$4 - 2x = 6$$
$$2x = 4 - 6$$
$$2x = -2$$
$$x = -1$$

$$5^{x-7} = \frac{1}{125}$$

$$5^{x-7} = \left(\frac{1}{5}\right)^3$$
$$5^{x-7} = 5^{-3}$$
$$x - 7 = -3$$
$$x = -3 + 7$$
$$x = 4$$

$$\left(\frac{1}{3}\right)^{x-8} = \frac{1}{9}$$

$$\left(\frac{1}{3}\right)^{x-8} = \left(\frac{1}{3}\right)^2$$
$$x - 8 = 2$$
$$x = 10$$

$$\left(\frac{1}{2}\right)^{6-2x} = 4$$

$$\left(\frac{1}{2}\right)^{6-2x} = 2^2$$
$$\left(\frac{1}{2}\right)^{6-2x} = \left(\frac{1}{2}\right)^{-2}$$
$$6 - 2x = -2$$
$$2x = 6 + 2$$
$$2x = 8$$
$$x = 4$$

$$16^{x-9} = \frac{1}{2}$$

$$\left(2^4\right)^{x-9} = 2^{-1}$$
$$2^{4(x-9)} = 2^{-1}$$
$$4x - 36 = -1$$
$$4x = 35$$
$$x = 8,75$$

$$\left(\frac{1}{32}\right)^{x-6} = 2$$

$$\left(\left(\frac{1}{2}\right)^5\right)^{x-6} = 2^1$$
$$\left(\frac{1}{2}\right)^{5(x-6)} = \left(\frac{1}{2}\right)^{-1}$$
$$5x - 30 = -1$$
$$5x = 29$$
$$x = 5,8$$

$$\left(\frac{1}{2}\right)^{x-6} = 8^x.$$

$$\left(\frac{1}{2}\right)^{x-6} = \left(2^3\right)^x$$
$$2^{-(x-6)} = 2^{3x}$$
$$-x + 6 = 3x$$
$$4x = 6$$
$$x = 6 : 4$$
$$x = 1,5$$

# Открытая база заданий по математике. ЕГЭ. 2010г.

$$\sqrt{15 - 2x} = 3$$

$$15 - 2x = 9$$

$$2x = 15 - 9$$

$$2x = 6$$

$$x = 3$$

$$\sqrt[4]{x + 1} = 2$$

$$x + 1 = 2^4$$

$$x + 1 = 16$$

$$x = 15$$

$$\sqrt{\dfrac{6}{4x - 54}} = \dfrac{1}{7}$$

$$\dfrac{6}{4x - 54} = \dfrac{1}{49}$$

$$6 \cdot 49 = 4x - 54$$

$$294 = 4x - 54$$

$$4x = 294 + 54$$

$$4x = 348$$

$$x = 348 : 4$$

$$x = 87$$

$$\sqrt{\dfrac{2x + 5}{3}} = 5$$

$$\dfrac{2x + 5}{3} = 25$$

$$2x + 5 = 3 \cdot 25$$

$$2x + 5 = 75$$

$$2x = 70$$

$$x = 35$$

$$\frac{4}{7}x = 7\frac{3}{7}.$$

$$x = 7\frac{3}{7} : \frac{4}{7} = \frac{7 \cdot 7 + 3}{7} \cdot \frac{7}{4} = \frac{52 \cdot 7}{7 \cdot 4} = \frac{52}{4} = 13$$

$$-\frac{2}{9}x = 1\frac{1}{9}.$$

$$x = 1\frac{1}{9} : \left(-\frac{2}{9}\right) = \frac{10}{9} : \left(-\frac{2}{9}\right) = -\frac{10 \cdot 9}{9 \cdot 2} = -5$$

$$\frac{x - 119}{x + 7} = -5.$$

$$\frac{x - 18}{x - 2} = 3.$$

$$\frac{x - 119}{x + 7} + 5 = 0$$

$$\frac{x - 119 + 5(x + 7)}{x + 7} = 0$$

$$x - 119 + 5x + 35 = 0$$

$$6x - 84 = 0$$

$$x = 14$$

$$\frac{x - 18}{x - 2} - 3 = 0$$

$$\frac{x - 18 - 3(x - 2)}{x - 2} = 0$$

$$x - 18 - 3x + 6 = 0$$

$$-2x - 12 = 0$$

$$-2x = 12$$

$$x = 12 : (-2)$$

$$x = -6$$

# Открытая база заданий по математике. ЕГЭ. 2010г.

Найдите корень уравнения. Если уравнение имеет более одного корня, то укажите наименьший (наибольший).

$4x^2 - 20x - 75 = 0.$

$D = 400 + 4 \cdot 4 \cdot 75 = 1600$

$x_1 = \dfrac{20 + 40}{4 \cdot 2} = \dfrac{60}{8} = 7,5$

$x_2 = \dfrac{20 - 40}{8} = -\dfrac{20}{8} = 2,5$

$\sqrt{-45 + 14x} = x.$

$-45 + 14x = x^2$

$x^2 - 14x + 45 = 0$

$D = 14^2 - 4 \cdot 45 = 16$

$x_1 = \dfrac{14 + 4}{2} = 8$

$x_2 = \dfrac{14 - 4}{2} = 5$

$\sqrt{-72 - 17x} = -x.$

$-72 - 17x = (-x)^2$

$-72 - 17x = x^2$

$x^2 + 17x + 72 = 0$

$D = 17^2 - 4 \cdot 72 = 1$

$x_1 = \dfrac{-17 + 1}{2} = \dfrac{-16}{2} = -8$

$x_2 = \dfrac{-17 - 1}{2} = -9$

*наименьший*

*корень* $-9$

$x = \dfrac{6x - 15}{x - 2}.$

$x - \dfrac{6x - 15}{x - 2} = 0$

$\dfrac{x(x - 2) - (6x - 15)}{x - 2} = 0$

$x^2 - 2x - 6x + 15 = 0$

$x^2 - 8x + 15 = 0$

$D = 64 - 60 = 4$

$x_1 = \dfrac{8 - 2}{2} = 3$

$x_2 = \dfrac{8 + 2}{2} = 5$

Найдите корень уравнения

$$\log_2(4-x) = 7$$

$4 - x = 2^7$

$x = 4 - 128$

$x = -124$

$$\log_5(5-x) = \log_5 3$$

5-x=3

x=5-3

x=2

$$\log_4(x+3) = \log_4(4x-15)$$

$x + 3 \geq 0, 4x - 15 \geq 0.$

$x + 3 = 4x - 15$

$-3x = -18$

$x = 6$

$$\log_{\frac{1}{7}}(7-x) = -2$$

$7 - x = \left(\dfrac{1}{7}\right)^{-2}$

$7 - x = 7^2$

$7 - x = 49$

$x = -42$

$$\log_5(5-x) = 2\log_5 3$$

$\log_5(5-x) = \log_5 3^2$

$5 - x = 9$

$x = 5 - 9$

$x = -4$

$$\log_4(16-2x) = 2\log_4 3$$

$\log_4(16-2x) = \log_4 3^2$

$16 - 2x = 9$

$2x = 16 - 9$

$2x = 7$

$x = 7 : 2$

$x = 3,5$