

Шифр 38

Внесите в таблицу номера правильных ответов. В заданиях, в которых отсутствуют варианты ответов, внесите правильный ответ.

1	2	3	4	5	6	7	8	9	10
3	5	2	2	3	1	4	3	3	3
-	+	-	+	-	-	-	+	+	+

11	12	13	14	15	16	17	18	19	20
2	4	3	4	3	4	2	4	3	1
+	-	-	+	-	+	-	-	-	-

$$\begin{array}{r} 324 \\ \times 4 \\ \hline 1296 \end{array}$$

$$\begin{aligned} & \log_6^2 9 + \frac{\log_6 324}{\log_4 6} = \log_6^2 9 + \frac{\log_6 324}{1} : \frac{1}{\log_4 6} = \log_6^2 9 + \frac{\log_6 324}{4} : \frac{1}{\log_8 4} = \\ & = \log_6^2 9 + \frac{\log_6 324}{1} \cdot \log_8 4 = \log_6^2 4 + \log_6 324 \cdot \log_8 4 = \log_6 4 / (\log_6 4 + \log_6 324) = \\ & = \log_6 4 \cdot \log_6 (324 \cdot 4) = \log_6 4 \cdot \log_6 1296 = \end{aligned}$$



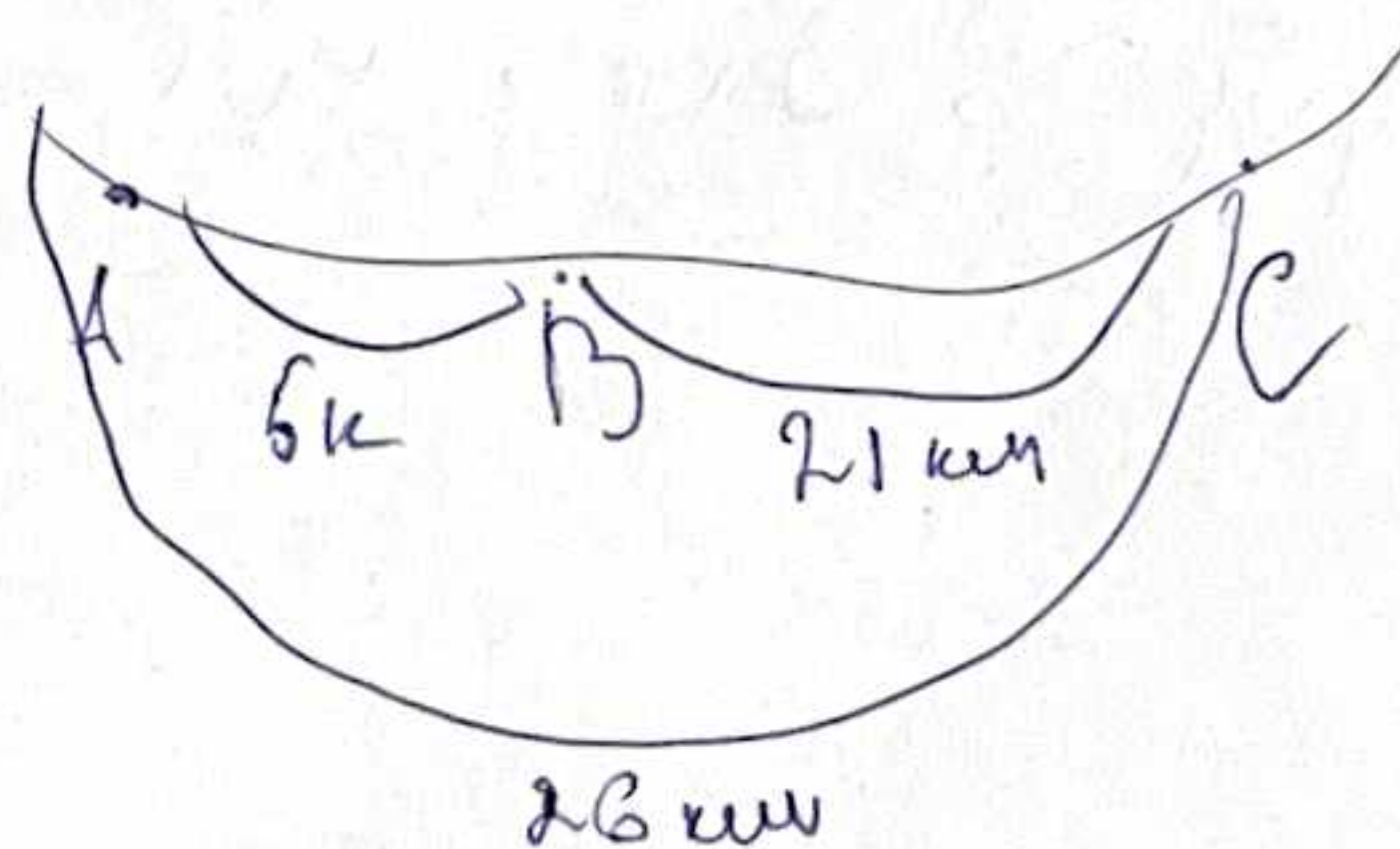
$$\begin{aligned} & \log_6^2 9 + \frac{\log_6 (36 \cdot 9)}{1} : \frac{1}{\log_4 6} = \log_6^2 9 + \log_6 36 + \log_6 9 : \frac{1}{\log_6 4} = \\ & = \log_6^2 9 + \log_6 9 + \log_6 4 + \log_6 9 \cdot \frac{\log_6 9 (\log_6 9 + \log_6 4)}{\log_6 4} = \frac{2 \log_6 9}{\log_6 4} = \frac{16}{86} = \frac{8}{43} \end{aligned}$$

$$\begin{aligned} & (0,6)^{x^2} \cdot (1,5)^{-x^2} = (0,4)^{2x+1} \\ & (0,6)^{x^2} \cdot (1,5)^{-x^2} = (0,4)^{2x} \cdot (0,4)^1 \end{aligned}$$



$$2\sqrt{2}x^2 - 16x + 9 = 0$$

$$D = 246 - 36 \cdot 2\sqrt{2} = 246 - 72\sqrt{2}$$



$$\frac{(x\sqrt{x} - 8y\sqrt{y} - 6\sqrt{xy})(\sqrt{x} - 2\sqrt{y})}{\sqrt{x} - 2\sqrt{y}} = x\sqrt{x} - 8y\sqrt{y} - 6\sqrt{xy} = x\sqrt{x} - 2\sqrt{y}(4y + 3\sqrt{x})$$

$$x\sqrt{x} - 2\sqrt{y}(4y + 3\sqrt{x})$$

$$(2\sqrt{y} - \sqrt{x})^2$$

$$x^2 + y^2 + 2xy = 6$$

$$x^2 + y^2 + 2xy = 6$$

$$\sqrt{31+8\sqrt{15}}(20-5\sqrt{15})$$

$$= \sqrt{31+8\sqrt{15}}(20-5\sqrt{15})^2$$

$$= \sqrt{31+8\sqrt{15}}(400+200\sqrt{15}+375)$$

$$= \sqrt{31+8\sqrt{15}}(775+200\sqrt{15})$$

$$= \sqrt{39425+6200\sqrt{15}+6200\sqrt{15}}$$

$$\begin{aligned} & \frac{120}{400} \quad 2ab \\ & -2 \cdot 20 \cdot (-5\sqrt{15}) \\ & = +40 \cdot 5\sqrt{15} = \\ & = 200\sqrt{15} \end{aligned}$$

$$\sqrt{31+8\sqrt{15}}(20-5\sqrt{15})^2$$

$$= \sqrt{31+8\sqrt{15}}(20^2+100\sqrt{15}+375)$$

$$\sqrt{31+8\sqrt{15}}(20-5\sqrt{15})^2 = \sqrt{(31+8\sqrt{15}) \cdot (400+200\sqrt{15}+375)} = \sqrt{31+8\sqrt{15}} \cdot 25(16+8\sqrt{15}+15)$$

$$= \sqrt{(31+8\sqrt{15}) \cdot 25 \cdot (31+8\sqrt{15})} = \sqrt{(31+8\sqrt{15}) \cdot 5} = 155+40\sqrt{15}$$

$$\sqrt{(31+8\sqrt{15}) \cdot 25} = (31+8\sqrt{15}) \cdot 5 = 155+40\sqrt{15}$$

$$\sqrt{(31+8\sqrt{15}) \cdot 25 \cdot (16+15+8\sqrt{15})} = \sqrt{(31+8\sqrt{15})^2 \cdot 25} = (31+8\sqrt{15}) \cdot 5 =$$

$$\frac{x\sqrt{x} - 8y\sqrt{y} - 6\sqrt{xy}(\sqrt{x} - 2\sqrt{y})}{(\sqrt{x} - 2\sqrt{y})} = \sqrt{x} - 8\sqrt{y} - 6\sqrt{xy}(\sqrt{x} - 2\sqrt{y})$$

$$(2\sqrt{y} - \sqrt{x})^2 = 4y + 4\sqrt{xy} + x$$

$$x\sqrt{x} - 8y\sqrt{y} - 6\sqrt{xy} = x\sqrt{x} - 2\sqrt{y}(4y - 3\sqrt{x})$$

$$\frac{\log_4 1}{1 + \log_4 1}$$

$$= \frac{\log_4 4}{\log_4 4 + 1} = \frac{1}{1 + 1} = \frac{1}{2}$$

$$\log_4 6$$

$$\log_4 6$$

$$\log_4 6$$

$$\frac{\log_4 6}{\log_4 6 + \log_4 6} = \frac{\log_4 6}{2\log_4 6} = \frac{1}{2}$$

ЛИСТ ОТВЕТА

$$\sqrt{31 + 8 \cdot \sqrt{15}} (20 - 5\sqrt{15})$$

$$\frac{x\sqrt{x} - 8y\sqrt{y} - 6\sqrt{xy}(\sqrt{x} - 2\sqrt{y})}{\sqrt{x} - 2\sqrt{y}} = \frac{x^2 - 8y\sqrt{xy} - 6x\sqrt{y} - 2x\sqrt{xy} + 16y^2 + 12y\sqrt{x}}{\sqrt{x} - 2\sqrt{y}}$$

$$= \frac{x^2 + 16y^2 - 2x\sqrt{xy} - 8y\sqrt{xy} - 6xy - 12y\sqrt{x}}{\sqrt{x} - 2\sqrt{y}}$$

ОДЗ

$$\begin{matrix} x-14 \neq 0 & 11-x \neq 0 \\ x \neq 14 & x \neq 11 \\ x-11 \neq 0 & \\ x \neq 11 & \end{matrix}$$

$$\frac{x(x-5)}{(x-14)(x-11)(x-14)} = \frac{24}{(11-x)}$$

$$\frac{(x^2-5x) \cdot (22-2x+x-11)}{(x-14)(11-x)} = \frac{24(2x-22-x+11)}{(x-14)(x-11)}$$

$$\frac{x^2-5}{(2x-11)-(x-14)} = \frac{24}{(x-14)(11-x)}$$

$$(x^2-5x)(22-2x) = 24(x-8)(x-14)(11-x)$$

$$(x^2-5x)(8-x)(x-14)(x-11) + 24(x-8)(x-14)(x-11) = 0$$

$$(x-14)(x-11) \cdot ((x^2-5x)(8-x) + 24(x-8)) = 0$$

$$(x-14)(x-11) \cdot (8-x) \cdot (x^2-5x-24) = 0$$

$$x=14 \text{ или } x=11 \text{ или } 8-x=0 \text{ или } x^2-5x-24=0$$

$$x \neq 14 \text{ (нет)} \quad x=11 \text{ (нет)}$$

$$x=8$$

$$\begin{aligned} x^2-5x-24 &= 0 \\ D &= 25+96=121=11^2 \\ x_1 &= \frac{5-11}{2} = -\frac{6}{2} = (-3) \\ x_2 &= \frac{5+11}{2} = \frac{16}{2} = 8 \end{aligned}$$

$$\text{Ответ: } 8+(-3) = 5$$

Ответ на _____ стр.

Подпись участника _____

$$\sqrt{31+8\sqrt{15}} \cdot (20-5\sqrt{15})^2 \leq \sqrt{31+8\sqrt{15}}$$

$$\sqrt{31+8\sqrt{15}} \cdot (20-5\sqrt{15}) \leq \sqrt{31+8\sqrt{15}} \cdot (20-5\sqrt{15})^2 \leq \sqrt{31+8\sqrt{15}} \cdot (100-200\sqrt{15}+375) \leq$$

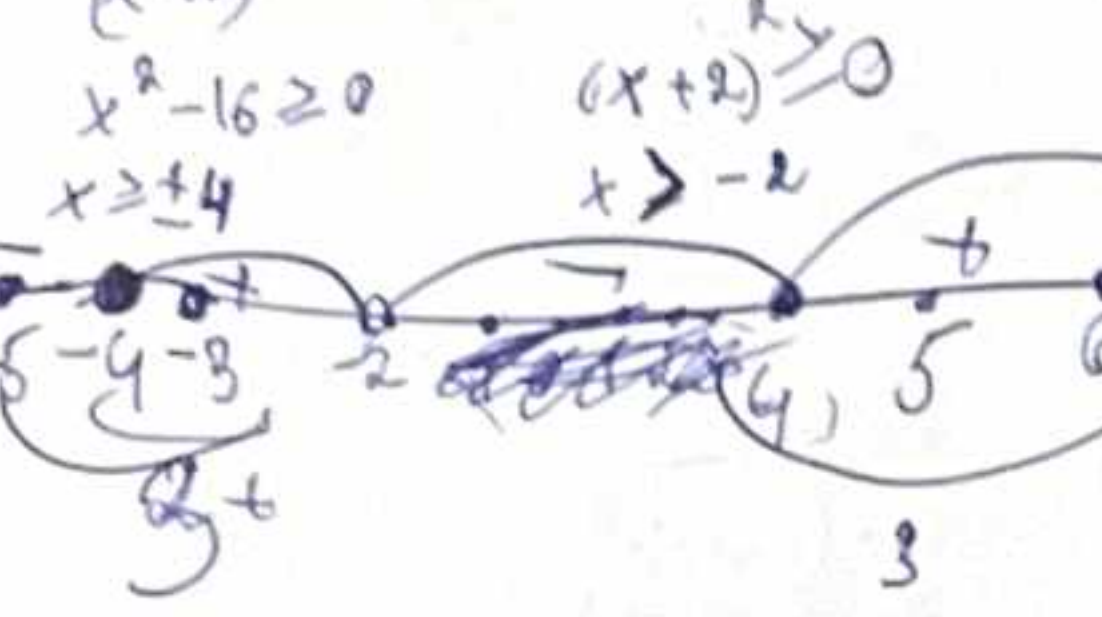
$$\sqrt{31+8\sqrt{15}} \cdot (475-200\sqrt{15}) \leq \sqrt{31+8\sqrt{15}}$$

$$\sqrt{31+8\sqrt{15}}$$

$$\frac{(x+1)^2 - 2x - 17}{(x+2)^2} \geq 0$$

$$\frac{(x^2 + 2x + 1 - 2x - 17)}{x^2 + 4x + 4} \geq 0$$

$$\frac{x^2 - 16}{(x+2)^2} \geq 0$$



3: $(x+2)^2 \neq 0$

$$x^2 + 4x + 4 \neq 0$$

$$D = 16 - 16 = 0 \text{ и не имеет}$$

$$x = -\frac{4}{2} = -2$$

$$\begin{array}{r} x^2 - 2x + 2 \\ 2x^2 - 4x + 4 \\ \hline 2x^2 - 2x + 2 \\ \hline 2x^2 - 4x + 4 \\ \hline 2x^2 - 2x + 2 \end{array}$$

$$(x-3)(x-1)^3 + (3-x)(x-2)^3 = 4(x-3)$$

$$(x-3)(x-1)^3 - (x-3)(x-2)^3 = 4(x-3)$$

$$(x-3)((x-1)^3 - (x-2)^3 - 4) = 0$$

$$(x-3)(x^2 + 2x^2 + 2x - 1 - (x^2 + 4x^2 + 8x - 4) - 4) = 0$$

$$(x-3)(3x^2 + 2x - 1 - x^2 - 4x^2 - 8x + 4 - 4) = 0$$

$$(x-3)(-5x^2 - 10x - 4) = 0$$

$$x-3=0 \text{ или } -5x^2 - 10x - 4=0$$

$$x=3$$

$$D = 100 - 4 \cdot 4 \cdot 5 = 100 - 80 = 20$$

$$(x-3)(-5x^2 - 10x - 4) = 0$$

$$x=3 \text{ или } 2x^2 + 6x + 8 = 0$$

Ответ: 3) $D = 36 - 4 \cdot 2 \cdot 8 = 36 - 64 = -28 < 0$ - 28 не имеет

~~$x+3 \leq 0$~~

~~$x(x-3) \leq 0$~~

~~$x=0$ или $x=3$~~

$$\sqrt{x-1} \sqrt{3x+1} = x+3$$

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

$$(x-1) \cdot (3x+1) = (x^2 + 6x + 9)$$

$$3x^2 - 8x - 1 - x^2 - 6x - 9 = 0$$

$$2x^2 - 8x - 10 = 0$$

$$D = 64 + 80 = 144 = 12$$

$$x_1 = \frac{8-12}{4} = -1$$

$$x_2 = \frac{8+12}{4} = 5$$

$$\frac{2 \cdot 5(5-1)}{5^2 + 5} = \frac{40(5-1)}{25 + 5} = \frac{50 - 10}{30} = \frac{40}{30} = \frac{4}{3}$$