

# Вычислите:

$$\begin{aligned}\sqrt{25} &= \text{blue circle} \\ \sqrt{0,01} &= \text{red circle} \\ \sqrt{4} + 3 &= \text{yellow circle} \\ \sqrt{-36} &= \text{purple circle} - \text{пустое множество} \\ \sqrt{0} &= \text{red circle} \\ \sqrt{81} + \sqrt{121} - \sqrt{144} &= \text{green circle}\end{aligned}$$

$$\begin{aligned}\sqrt{121} &= \text{green circle} \\ 10 - \sqrt{81} &= \text{red circle} \\ \sqrt{11+5} &= \text{purple circle} \\ \sqrt{-1} &= \text{yellow circle} \\ -\sqrt{49} &= \text{blue circle} \\ \sqrt{0,25} - \sqrt{0,0049} &= \text{red circle}\end{aligned}$$

**02.11.2020**

**Свойства  
арифметического  
квадратного  
корня**

**Если  $a \geq 0$ ;  $b \geq 0$ , то**

$$\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$$

$$\sqrt{a} \cdot \sqrt{b} = \sqrt{a \cdot b}$$

**Например:**

$$1) \sqrt{81 \cdot 9} = \sqrt{81} \cdot \sqrt{9} = 9 \cdot 3 = 27$$

$$2) \sqrt{2} \cdot \sqrt{8} = \sqrt{16} = 4$$

**Если  $a \geq 0$ ,  $b > 0$ , то**

$$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$$

$$\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$$

**Например:**

$$1) \sqrt{\frac{36}{169}} = \frac{\sqrt{36}}{\sqrt{169}} = \frac{6}{13}$$

$$2) \frac{\sqrt{80}}{\sqrt{5}} = \sqrt{\frac{80}{5}} = \sqrt{16} = 4$$

$$3) \sqrt{10 \frac{9}{16}} = \sqrt{\frac{169}{16}} = \frac{13}{4}$$

$$4) \sqrt{37^2 - 12^2} = \sqrt{(37 - 12)(37 + 12)} = \sqrt{25 \cdot 49} = \\ = 5 \cdot 7 = 35$$

Если  $a \geq 0$ ;  $n \in \mathbb{N}$ , то

$$\sqrt{a^2} = |a| = \begin{cases} -a, & \text{если } a < 0 \\ a, & \text{если } a \geq 0 \end{cases}$$

$$1) \sqrt{5^2} = |5| = 5$$

$$2) \sqrt{(-6)^2} = |-6| = 6$$

$$3) \sqrt{a^{10}} = \sqrt{(a^5)^2} = |a^5| = \begin{cases} -a^5, & \text{если } a < 0 \\ a^5, & \text{если } a \geq 0 \end{cases}$$

$$\sqrt{7056} = \sqrt{2^4 \cdot 3^2 \cdot 7^2} = 2^2 \cdot 3 \cdot 7 = 84$$

|      |   |
|------|---|
| 7056 | 2 |
| 3528 | 2 |
| 1764 | 2 |
| 882  | 2 |
| 441  | 3 |
| 147  | 3 |
| 49   | 7 |
| 7    | 7 |
| 1    |   |

$$\begin{aligned} & \sqrt{(\sqrt{7} - 12)^2} + \sqrt{7} = |\sqrt{7} - 12| + \sqrt{7} = \\ & = 12 - \sqrt{7} + \sqrt{7} = 12 \end{aligned}$$



## Свойства:

$$1. \sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$$

$$2. \sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}, b \neq 0$$

$$3. \sqrt{0} = 0, \sqrt{1} = 1$$

$$4. \sqrt{a^2} = |a|$$

$$(\sqrt{a})^2 = a$$

# Вычислите

$$\sqrt{61^2 - 60^2} =$$

$$\left(\sqrt{18} + \sqrt{2}\right)^2 = \sqrt{18}^2 + 2\sqrt{18} \cdot \sqrt{2} + \sqrt{2}^2 = 18 + 2\sqrt{18 \cdot 2} + 2$$

$$\sqrt{5 \cdot 6 \cdot 10 \cdot 3} =$$

30

11

40

32

# *Работа в классе*

*№145(а,в,д,ж), №151(а,в,д,ж)*

## *Домашнее задание*

*п.3.3, свойства учить, №151(б,г,е,з),  
выполнить задание на портале*

*ЯКласс:*

*[https://www.yaclass.ru/TestWork/Join/  
H55CNWmeOUejZIFCoDsQAq](https://www.yaclass.ru/TestWork/Join/H55CNWmeOUejZIFCoDsQAq)*