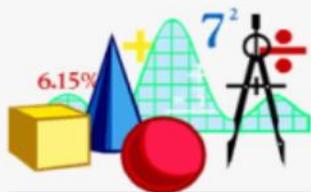




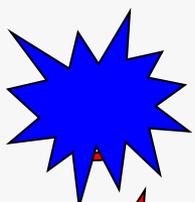
# Тема урока

# Свойства арифметического квадратного корня



# Вычислите

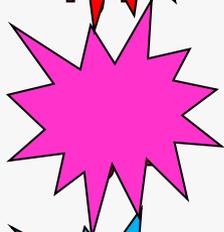
$$\sqrt{121} - (\sqrt{3})^2 =$$



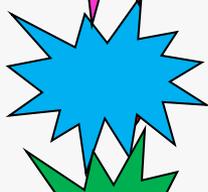
$$\sqrt{1,44} + \sqrt{\frac{25}{100}} =$$



$$-\sqrt{\frac{1}{9}} \cdot \sqrt{0,36} =$$



$$(3\sqrt{5})^2 =$$



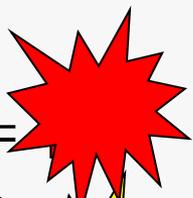
$$\sqrt{100} \cdot \sqrt{0,09} =$$



$$\sqrt{225} - \sqrt{81} =$$



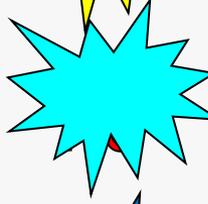
$$\sqrt{625} - \sqrt{225} =$$



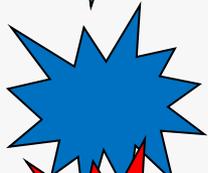
$$-(6\sqrt{5})^2 =$$



$$\sqrt{\frac{9}{25}} \cdot \sqrt{6,25} =$$



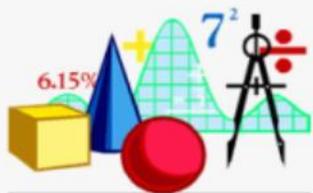
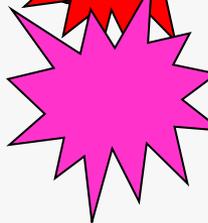
$$\sqrt{9} + \sqrt{3^2} =$$



$$6 - \sqrt{6,25} =$$



$$\sqrt{0,04 \cdot 81} =$$



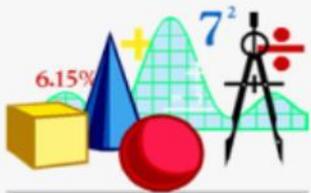
# Вычислите



$$a) 0,5\sqrt{0,04} + \frac{1}{6}\sqrt{144}$$

$$б) 2\sqrt{1\frac{9}{16}} - 1$$

$$в) (2\sqrt{0,5})^2$$



# Вычислите

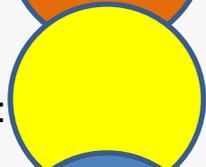
$$\sqrt{25} =$$



$$\sqrt{0,01} =$$



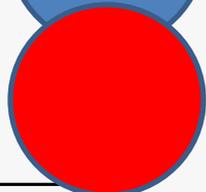
$$\sqrt{4} + 3 =$$



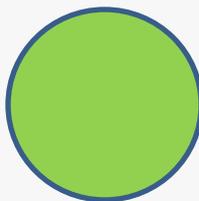
$$\sqrt{-36} =$$



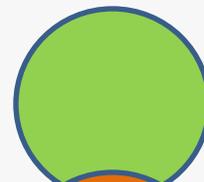
$$\sqrt{0} =$$



$$\sqrt{81} + \sqrt{121} - \sqrt{144} =$$



$$\sqrt{121} =$$



$$10 - \sqrt{81} =$$



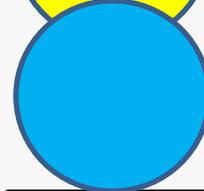
$$\sqrt{11+5} =$$



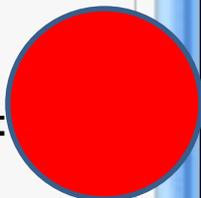
$$\sqrt{-1} =$$



$$-\sqrt{49} =$$



$$\sqrt{0,25} - \sqrt{0,0049} =$$

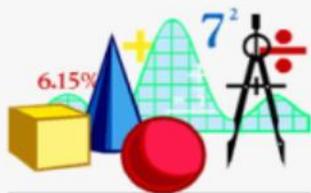


# Решите уравнение



$$a) x^2 = 0,81$$

$$б) x^2 = 0,64$$

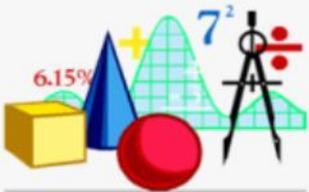


# Упростите выражение



$$a) \frac{1}{3} v^3 \sqrt{9v^2}, \quad v \leq 0;$$

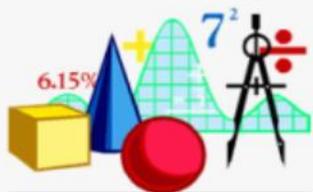
$$б) 2x^2 \sqrt{\frac{49}{x^2}}, \quad x \neq 0$$



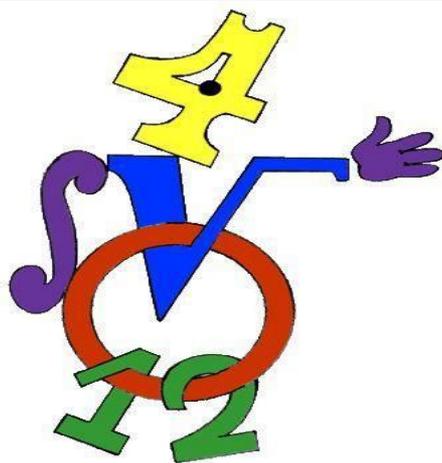
**Укажите два  
последовательных  
натуральных числа,  
между которыми  
заключено число**

$$a) \sqrt{56}$$

$$б) \sqrt{37}$$



# Свойства:



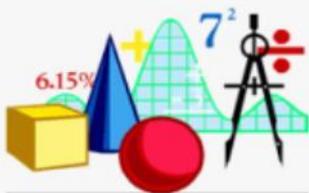
$$1. \sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$$

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

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

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

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



# Решаем примеры:

Вычислите значение квадратного корня, используя теорему о корне из произведения:

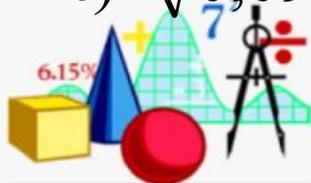
$$\sqrt{\triangle \cdot \bigcirc} = \sqrt{\triangle} \cdot \sqrt{\bigcirc}$$

$$1) \sqrt{100 \cdot 16} = \sqrt{100} \cdot \sqrt{16} = 10 \cdot 4 = 40$$

$$2) \sqrt{1,44 \cdot 4} = \sqrt{1,44} \cdot \sqrt{4} = 1,2 \cdot 2 = 2,4$$

$$3) \sqrt{0,25 \cdot 0,81} = \sqrt{0,25} \cdot \sqrt{0,81} = 0,5 \cdot 0,9 = 0,45$$

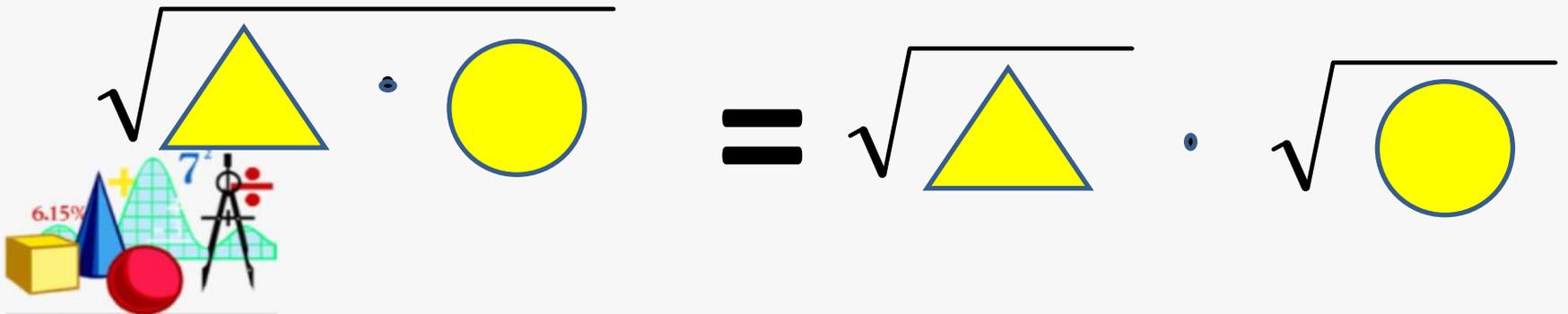
$$4) \sqrt{0,09 \cdot 121 \cdot 0,25} = \sqrt{0,09} \cdot \sqrt{121} \cdot \sqrt{0,25} = 0,3 \cdot 11 \cdot 0,5 = 1,65$$



$$1) \sqrt{72 \cdot 18} = \sqrt{36 \cdot 2 \cdot 9 \cdot 2} = \sqrt{36 \cdot 9 \cdot 4} = 6 \cdot 3 \cdot 2 = 36$$

$$2) \sqrt{75 \cdot 27} = \sqrt{25 \cdot 3 \cdot 9 \cdot 3} = \sqrt{25 \cdot 9 \cdot 9} = 5 \cdot 3 \cdot 3 = 45$$

$$3) \sqrt{3,6 \cdot 2,5} = \sqrt{36 \cdot 0,1 \cdot 25 \cdot 0,1} = \sqrt{36 \cdot 25 \cdot 0,01} = 6 \cdot 5 \cdot 0,1 = 3$$



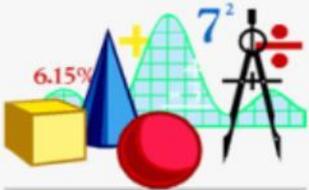
## Вычислите значение выражения

$$\begin{aligned}\sqrt{122^2 - 22^2} &= \sqrt{(122 - 22)(122 + 22)} = \sqrt{100 \cdot 144} = \\ &= 10 \cdot 12 = 120\end{aligned}$$

$$\sqrt{82^2 - 18^2} = \sqrt{(82 - 18)(82 + 18)} = \sqrt{64 \cdot 100} = 8 \cdot 10 = 80$$

$$\sqrt{21,8^2 - 18,2^2} = \sqrt{(21,8 - 18,2)(21,8 + 18,2)} = = \sqrt{3,6 \cdot 40} =$$

$$\sqrt{36 \cdot 0,1 \cdot 4 \cdot 10} = \sqrt{36 \cdot 4} = 6 \cdot 2 = 12$$

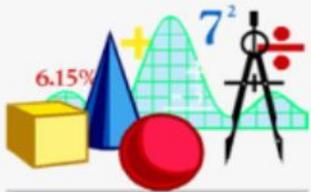


**Вычислите значение квадратного корня,  
используя теорему о корне из частного**

$$\sqrt{\frac{\triangle}{\bigcirc}} = \frac{\sqrt{\triangle}}{\sqrt{\bigcirc}}$$

$$1) \sqrt{11\frac{1}{9}} = \sqrt{\frac{100}{9}} = \frac{\sqrt{100}}{\sqrt{9}} = \frac{10}{3} = 3\frac{1}{3}$$

$$2) \frac{\sqrt{4,8}}{\sqrt{0,3}} = \sqrt{\frac{4,8}{0,3}} = \sqrt{16} = 4$$

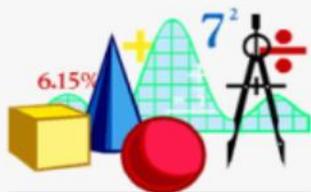


# Решить используя свойства

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

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

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



30

11

40

32

# Спасибо за урок!

