

ルートの性質-1

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

$$(\oplus \sqrt{8})^2 = \oplus 8$$

マイナスだよ!

$$\ominus (\sqrt{9})^2 = \ominus 9$$

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

$$(\ominus \sqrt{3})^2 = \oplus 3$$

マイナスだよ!

$$\ominus (-\sqrt{11})^2 = \ominus 11$$

性質-1
応用

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

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

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

$$-\sqrt{7} \times -\sqrt{7} = (-\sqrt{7})^2 = 7$$

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

マイナスだよ!

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

ルートの性質-2

$$\oplus \sqrt{a^2} = \oplus a$$

$$\textcircled{1} \oplus \sqrt{8^2} = \oplus 8$$

$$\textcircled{3} \pm \sqrt{11^2} = \pm 11$$

$$\ominus \sqrt{a^2} = \ominus a$$

$$\textcircled{2} \ominus \sqrt{3^2} = \ominus 3$$

$$\textcircled{4} \ominus \sqrt{(-6)^2}$$

性質-2
応用

$$\textcircled{5} \oplus \sqrt{81} = \oplus \sqrt{9^2} = \oplus 9$$

$$\textcircled{6} \ominus \sqrt{0.0016} = \ominus \sqrt{0.04^2} = \ominus 0.04$$

$$= \ominus \sqrt{36}$$

$$= \ominus \sqrt{6^2}$$

$$= \ominus 6$$

ルートの性質-3

$$\boxed{a} \sqrt{x} = \sqrt{\boxed{a^2} \times x}$$

$$\boxed{3} \sqrt{2} = \sqrt{\boxed{3^2} \times 2} = \sqrt{\boxed{9} \times 2} = \sqrt{18}$$

$$-\boxed{a} \sqrt{x} = -\sqrt{\boxed{a^2} \times x}$$

$$-\boxed{\frac{3}{2}} \sqrt{2} = -\sqrt{\boxed{\left(\frac{3}{2}\right)^2} \times 2} = -\sqrt{\boxed{\frac{9}{4}} \times \frac{\cancel{2}^1}{1}} = -\sqrt{\frac{9}{2}}$$

ルートの性質-4

$\sqrt{\quad}$ の中の簡単化

必ずすること!!

$$\sqrt{a} = \sqrt{\boxed{\quad} \times \boxed{\quad} \times \Delta} = \boxed{\quad} \sqrt{\Delta}$$

$$-\sqrt{a} = -\sqrt{\boxed{\quad} \times \boxed{\quad} \times \boxed{\quad} \times \boxed{\quad} \times \Delta} = \boxed{\quad} \times \boxed{\quad} \times \boxed{\quad} \sqrt{\Delta}$$

かけ算

$$\sqrt{12} = \sqrt{\boxed{2 \times 2} \times 3}$$

$$\sqrt{180} = \sqrt{\boxed{2 \times 2} \times \boxed{3 \times 3} \times 5}$$

$$\sqrt{60} = \sqrt{\boxed{2 \times 2} \times 3 \times 5}$$

$$= \boxed{2} \sqrt{3}$$

かけ算

$$= \boxed{2} \times \boxed{3} \sqrt{5}$$

$$= \boxed{2} \sqrt{3 \times 5}$$

$$= \boxed{6} \sqrt{5}$$

$$= \boxed{2} \sqrt{15}$$