

nth roots: WKST 2

Date _____ Period _____

Simplify.

1) $5\sqrt{15} \cdot 3\sqrt{20}$

2) $\sqrt[4]{48} \cdot 4\sqrt[4]{24}$

3) $\sqrt[3]{4} \cdot \sqrt[3]{6}$

4) $\sqrt[3]{-15} \cdot 4\sqrt[3]{45}$

5) $\sqrt{20} \cdot -5\sqrt{20}$

6) $\sqrt[3]{-3} \cdot \sqrt[3]{5}$

7) $-4\sqrt{3} \cdot \sqrt{6}$

8) $2\sqrt[5]{36} \cdot \sqrt[5]{81}$

9) $\sqrt{5}(\sqrt{10} + \sqrt{6})$

10) $\sqrt{3}(5 + \sqrt{3})$

11) $(\sqrt{2} - 4\sqrt{5})(\sqrt{2} + \sqrt{5})$

12) $(3\sqrt{3} + \sqrt{5})(4\sqrt{2} + \sqrt{5})$

13) $\frac{\sqrt{8}}{\sqrt{18}}$

14) $\frac{\sqrt{3}}{\sqrt{2}}$

15) $\frac{2}{4 + 3\sqrt{2}}$

16) $\frac{3}{3 - \sqrt{5}}$

17) $\frac{2}{\sqrt[3]{2}}$

18) $\frac{2}{\sqrt[3]{3}}$

19) $\frac{\sqrt[4]{2}}{\sqrt[4]{8}}$

20) $\frac{\sqrt[5]{3}}{\sqrt[5]{8}}$

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Simplify.

$$1) 5\sqrt{15} \cdot 3\sqrt{20}$$

$$150\sqrt{3}$$

$$2) \sqrt[4]{48} \cdot 4\sqrt[4]{24}$$

$$8\sqrt[4]{72}$$

$$3) \sqrt[3]{4} \cdot \sqrt[3]{6}$$

$$2\sqrt[3]{3}$$

$$4) \sqrt[3]{-15} \cdot 4\sqrt[3]{45}$$

$$-12\sqrt[3]{25}$$

$$5) \sqrt{20} \cdot -5\sqrt{20}$$

$$-100$$

$$6) \sqrt[3]{-3} \cdot \sqrt[3]{5}$$

$$-\sqrt[3]{15}$$

$$7) -4\sqrt{3} \cdot \sqrt{6}$$

$$-12\sqrt{2}$$

$$8) 2\sqrt[5]{36} \cdot \sqrt[5]{81}$$

$$6\sqrt[5]{12}$$

$$9) \sqrt{5}(\sqrt{10} + \sqrt{6})$$

$$5\sqrt{2} + \sqrt{30}$$

$$10) \sqrt{3}(5 + \sqrt{3})$$

$$5\sqrt{3} + 3$$

$$11) (\sqrt{2} - 4\sqrt{5})(\sqrt{2} + \sqrt{5})$$

$$-18 - 3\sqrt{10}$$

$$12) (3\sqrt{3} + \sqrt{5})(4\sqrt{2} + \sqrt{5})$$

$$12\sqrt{6} + 3\sqrt{15} + 4\sqrt{10} + 5$$

$$13) \frac{\sqrt{8}}{\sqrt{18}} \cdot \frac{2}{3}$$

$$14) \frac{\sqrt{3}}{\sqrt{2}} \cdot \frac{\sqrt{6}}{2}$$

$$15) \frac{2}{4 + 3\sqrt{2}}$$

$$-4 + 3\sqrt{2}$$

$$16) \frac{3}{3 - \sqrt{5}} \cdot \frac{9 + 3\sqrt{5}}{4}$$

$$17) \frac{2}{\sqrt[3]{2}}$$

$$\sqrt[3]{4}$$

$$18) \frac{2}{\sqrt[3]{3}} \cdot \frac{2\sqrt[3]{9}}{3}$$

$$19) \frac{\sqrt[4]{2}}{\sqrt[4]{8}} \cdot \frac{\sqrt[4]{4}}{2}$$

$$20) \frac{\sqrt[5]{3}}{\sqrt[5]{8}} \cdot \frac{\sqrt[5]{12}}{2}$$