

General Algebra II Worksheet #5 Unit 7 Selected Solutions

Express each of the following in simplest form.

$$1. \quad \sqrt{48} = \sqrt{16} \sqrt{3} = 4\sqrt{3}$$

$$4. \quad \sqrt[3]{-54} = \sqrt[3]{-27} \sqrt[3]{2} = -3\sqrt[3]{2}$$

$$7. \quad \sqrt{\frac{-3}{8}} = \boxed{\frac{\sqrt{6}}{4} i}$$

$$8. \quad \sqrt[3]{\frac{-3}{8}} =$$

$$= \sqrt{\frac{3}{8}} \cdot \sqrt{-1} = \sqrt{\frac{6}{16}} i = \frac{\sqrt{6}}{\sqrt{16}} i =$$

$$\frac{\sqrt[3]{-3}}{\sqrt[3]{8}} = \frac{\sqrt[3]{-1} \cdot \sqrt[3]{3}}{2} = \boxed{\frac{-\sqrt[3]{3}}{2}}$$

$$10. \quad \sqrt[3]{1.6} =$$

$$11. \quad \sqrt{-1.25} =$$

$$= \sqrt[3]{\frac{8}{5}} = \frac{\sqrt[3]{200}}{\sqrt[3]{125}} = \frac{\sqrt[3]{8} \cdot \sqrt[3]{25}}{\sqrt[3]{125}} =$$

$$\sqrt{\frac{-5}{4}} = \frac{\sqrt{-5}}{\sqrt{4}}$$

$$= \boxed{\frac{2\sqrt[3]{25}}{5}}$$

$$= \frac{\sqrt{5} \cdot \sqrt{-1}}{2} = \boxed{\frac{\sqrt{5} i}{2} \text{ or } \frac{i\sqrt{5}}{2}}$$

Perform the indicated operations. Express each of the following in simplest form.

$$13. \quad \sqrt{12} + \sqrt{27} = 5\sqrt{3}$$

$$16. \quad \sqrt[3]{\frac{3}{4}} + \sqrt[3]{\frac{2}{9}} =$$

$$\sqrt{4} \sqrt{3} + \sqrt{9} \sqrt{3} =$$

$$= \sqrt[3]{\frac{6}{8}} + \sqrt[3]{\frac{6}{27}} = \frac{\sqrt[3]{6}}{\sqrt[3]{8}} + \frac{\sqrt[3]{6}}{\sqrt[3]{27}} =$$

$$2\sqrt{3} + 3\sqrt{3} = 5\sqrt{3}$$

$$\frac{\sqrt[3]{6}}{2} + \frac{\sqrt[3]{6}}{3} =$$

$$\frac{3\sqrt[3]{6}}{6} + \frac{2\sqrt[3]{6}}{6} = \boxed{\frac{5\sqrt[3]{6}}{6}}$$