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MTH05

Quiz 10 (Sample)

Instructions

Solve each problem and mark your answers clearly. Show all work, using additional paper if needed. Simplify your answers whenever possible. Do not use a calculator.

Simplify each of these radical expressions:

1. $8\sqrt{13} - 3\sqrt{13} =$

2. $4\sqrt{5} + 3\sqrt{6} - \sqrt{5} =$

3. $2\sqrt{3} + \sqrt{11} - 7\sqrt{3} + 3\sqrt{11} =$

4. $\sqrt{300} + \sqrt{48} - 3\sqrt{3} =$

5. $\sqrt[3]{27} =$

6. $\sqrt[3]{54} - \sqrt[3]{16} =$

7. $\sqrt{\frac{5}{9}} =$

8. $\sqrt{\frac{7}{3}} =$

9. $\sqrt{10}(\sqrt{6} + \sqrt{2}) =$

10. $\sqrt{-81} =$

Answers

Quiz 10 (Sample)

1. $8\sqrt{13} - 3\sqrt{13} = 5\sqrt{13}$

2. $4\sqrt{5} + 3\sqrt{6} - \sqrt{5} = 3\sqrt{5} + 3\sqrt{6}$

3. $2\sqrt{3} + \sqrt{11} - 7\sqrt{3} + 3\sqrt{11} = -5\sqrt{3} + 4\sqrt{11}$

4. $\sqrt{300} + \sqrt{48} - 3\sqrt{3} =$
 $\sqrt{100 \cdot 3} + \sqrt{16 \cdot 3} - 3\sqrt{3} =$
 $\sqrt{100} \cdot \sqrt{3} + \sqrt{16} \cdot \sqrt{3} - 3\sqrt{3} =$
 $10\sqrt{3} + 4\sqrt{3} - 3\sqrt{3} =$
 $11\sqrt{3}$

5. $\sqrt[3]{27} = 3$

6. $\sqrt[3]{54} - \sqrt[3]{16} =$
 $\sqrt[3]{27 \cdot 2} - \sqrt[3]{8 \cdot 2} =$
 $\sqrt[3]{27} \cdot \sqrt[3]{2} - \sqrt[3]{8} \cdot \sqrt[3]{2} =$
 $3\sqrt[3]{2} - 2\sqrt[3]{2} =$
 $\sqrt[3]{2}$

7. $\sqrt{\frac{5}{9}} = \frac{\sqrt{5}}{\sqrt{9}} = \frac{\sqrt{5}}{3}$

8. $\sqrt{\frac{7}{3}} = \frac{\sqrt{7}}{\sqrt{3}} = \frac{\sqrt{7} \sqrt{3}}{\sqrt{3} \sqrt{3}} = \frac{\sqrt{21}}{3}$

9. $\sqrt{10}(\sqrt{6} + \sqrt{2}) =$
 $\sqrt{10}\sqrt{6} + \sqrt{10}\sqrt{2} =$
 $\sqrt{60} + \sqrt{20} =$
 $\sqrt{4 \cdot 15} + \sqrt{4 \cdot 5} =$
 $2\sqrt{15} + 2\sqrt{5}$

10. $\sqrt{-81} = \sqrt{81(-1)} = \sqrt{81}\sqrt{-1} = 9i$