Lesson 3.2: Operations with Radicals

Explore Your Understanding Assignment

This assignment includes multiple choice and short answer questions. For multiple choice questions, select the best answer. Each is worth 1 mark. Marks assigned to short answer questions are indicated for each question. Be sure to show all necessary work.

(1) _____ 1. When fully simplified, the expression of $\sqrt[3]{40} + \sqrt[3]{81} - 6\sqrt[3]{5} + \sqrt[3]{375}$ is

A. $4\sqrt[3]{5}$
B. $-4\sqrt[3]{5} + 8\sqrt[3]{3}$
C. $2\sqrt[3]{10} + 9 - 6\sqrt[3]{5} + 5\sqrt[3]{15}$
D. $8\sqrt[3]{5}$

(1) _____ 2. The simplified version of $2\sqrt{33} \cdot 5\sqrt{6}$ is

A. $10\sqrt{22}$
B. $10\sqrt{198}$
C. $30\sqrt{11}$
D. $30\sqrt{22}$

(1) _____ 3. The simplified version of $\dfrac{3\sqrt[3]{4} - 5\sqrt[3]{6}}{\sqrt[3]{2}}$ is

A. $3\sqrt[3]{2} - 5\sqrt[3]{3}$
B. $3\sqrt[3]{2} - 5\sqrt[3]{6}$
C. $3\sqrt[3]{4} - 5\sqrt[3]{3}$
D. The expression is already in its most simplified form.

(1)_____ 4. Simplify the expression $\frac{\sqrt[4]{6}}{8\sqrt[4]{12}}$ by rationalizing the denominator.

A. $\frac{1}{8\sqrt[4]{2}}$

B. $\frac{\sqrt[4]{2}}{16}$

C. $\frac{\sqrt[4]{8}}{16}$

D. $\frac{\sqrt[4]{3}}{16}$

(1)_____ 5. The conjugate of the binomial $\sqrt{3i} - 4\sqrt{5}$ is

A. $\sqrt{3i} - 4\sqrt{5}$

B. $\sqrt{3i} + 4\sqrt{5}$

C. $-\sqrt{3i} - 4\sqrt{5}$

D. $\sqrt{5} - 4\sqrt{3i}$

(3) 6. Simplify the expression $\sqrt{18t^3} + \sqrt[3]{128} - \sqrt[3]{16} + t\sqrt{32t}$. Show all work and indicate any restrictions on t.

(2) 7. Simplify the expression $\frac{3\sqrt{7}}{\sqrt{14}-4\sqrt{7}}$ by rationalizing the denominator. Show all work.

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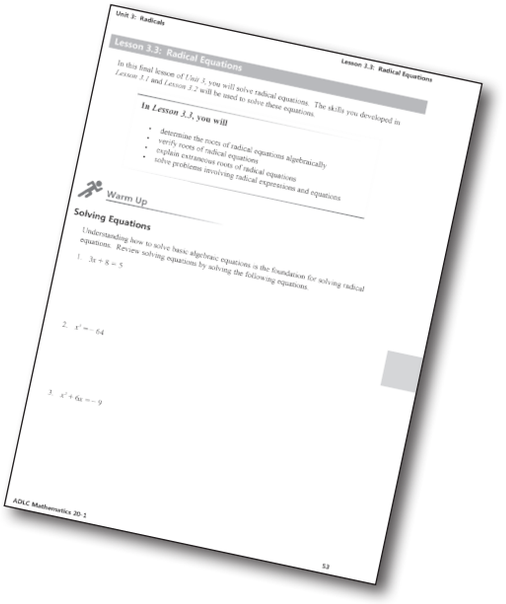
You have completed *Lesson 3.2 Explore Your Understanding Assignment*. Please review all work in *Workbook 3A* to ensure it is your best work. Submit *Workbook 3A* for marking at this time and proceed to *Lesson 3.3* in the *Module*.


Unit 3: Radicals

Lesson 3.3: Radical Equations

Lesson 3.3: Radical Equations

In this final lesson of *Unit 3*, you will solve radical equations. The skills you developed in *Lesson 3.1* and *Lesson 3.2* will be used to solve these equations.

In *Lesson 3.3*, you will

- determine the roots of radical equations algebraically
- verify roots of radical equations
- explain extraneous roots of radical equations
- solve problems involving radical expressions and equations

Warm Up

Solving Equations

Understanding how to solve basic algebraic equations is the foundation for solving radical equations. Review solving equations by solving the following equations.

1. $3x + 8 = 5$

2. $x^3 = -64$

3. $x^2 + 6x = -9$

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