

6-2

Standardized Test Prep

Multiplying and Dividing Radical Expressions

Multiple Choice

For Exercises 1–5, choose the correct letter. Assume that all variables are positive.

1. What is the simplest form of $\sqrt[3]{-49x} \cdot \sqrt[3]{7x^2}$?

(A) $7x\sqrt{7x}$

(B) $-7x$

(C) $7x$

(D) $-7\sqrt[3]{x^2}$

2. What is the simplest form of $\sqrt{80x^7y^6}$?

(F) $2x^3y^3\sqrt{20x}$

(G) $4x^6y^6\sqrt{5x^3}$

(H) $4\sqrt{5x^7y^6}$

(I) $4x^3y^3\sqrt{5x}$

3. What is the simplest form of $\sqrt[3]{25xy^2} \cdot \sqrt[3]{15x^2}$?

(A) $5x\sqrt[3]{3y^2}$

(B) $5x\sqrt[3]{3y}$

(C) $15xy\sqrt[3]{y}$

(D) $5xy\sqrt{15x}$

4. What is the simplest form of $\frac{\sqrt{75x^5}}{\sqrt{12xy^2}}$?

(F) $\frac{5\sqrt{3x^4}}{2\sqrt{3y^2}}$

(G) $\frac{5x^2}{2y}$

(H) $\frac{5x\sqrt{x}}{2y}$

(I) $\frac{5x^2y}{2}$

5. What is the simplest form of $\frac{2\sqrt[3]{x^2y}}{\sqrt[3]{4xy^2}}$?

(A) $\frac{\sqrt[3]{x^2y}}{2y}$

(B) $\frac{x\sqrt[3]{2y}}{y}$

(C) $\frac{\sqrt[3]{2xy^2}}{y}$

(D) $\frac{\sqrt[3]{2y}}{xy}$

Short Response

6. The volume V of a wooden beam is $V = ls^2$, where l is the length of the beam and s is the length of one side of its square cross section. If the volume of the beam is 1200 in.^3 and its length is 96 in. , what is the side length? Show your work.