

Alg 2 Quiz Review for Sections 5-1 to 5-2 Spring 2020

1. Simplify. Use absolute value symbols as needed.

a) $\sqrt[4]{162a^6b^{13}c^{19}}$ b) $\sqrt[3]{-24m^{14}n^{23}}$ c) $\sqrt{72w^5x^{11}}$

2. Simplify each. Assume that all variables are positive quantities. Make sure denominators in answers are rationalized. Give answers in reduced radical form.

a) $5\sqrt{180} + 3\sqrt{96} - 2\sqrt{20} + \sqrt{54}$ b) $\sqrt{7e^4g^3} \cdot \sqrt{16eg^9}$ c) $\frac{\sqrt[3]{250c^7r}}{\sqrt[3]{2c^2r^{10}}}$
 d) $(3 - \sqrt{6})(4 + \sqrt{6})$ e) $(4 + 3\sqrt{11})(5 - 2\sqrt{11})$ f) $\sqrt[3]{12a^4b^7} \cdot \sqrt[3]{10a^3b^4}$
 g) $\sqrt{21g^6h^7} \cdot \sqrt{3g^5h^8}$ h) $\frac{\sqrt{24j^7k^6}}{\sqrt{16j^4k^{12}}}$

3. Rationalize each denominator and simplify. Assume all variables are positive quantities.

a) $\frac{2x}{\sqrt{6x^7yz^3}}$ b) $\frac{11a^5}{\sqrt[3]{5a^8b^4}}$ c) $\frac{5n}{\sqrt{12k^5m^{11}n^8}}$
 d) $\frac{4}{7 + \sqrt{10}}$ e) $\frac{5 + 3\sqrt{2}}{2 - \sqrt{2}}$ f) $\frac{12c}{\sqrt[3]{16c^6d^8e^{13}}}$

4. Rewrite in radical form. a) $7a^{\frac{2}{5}}$ b) $(6b)^{\frac{1}{3}}$

5. Rewrite in exponential form. a) $\sqrt[7]{h^4}$ b) $\sqrt{5c}$ c) $8 \cdot \sqrt[4]{m^3}$

6. Simplify each. Assume that all variables are positive quantities. No decimals. Give fractional answers in reduced form. Give answers in reduced radical form.

a) $(7k^{\frac{5}{6}})^3$ b) $(4r^6)^{\frac{3}{2}}$ c) $(27n^9)^{\frac{-2}{3}}$ d) $\left(\frac{x^{\frac{-5}{2}}}{y^3}\right)^{-4}$ e) $\left(\frac{32^{-1}m^{-2}n^{-3}}{2m^{\frac{1}{3}}n^{-9}}\right)^{-\frac{4}{3}}$

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1. a) $3|ab^3|c^4\sqrt{2a^2bc^3}$ b) $-2m^4n^7\sqrt[3]{3m^2n^2}$ c) $6w^2|x^5|\sqrt{2wx}$

2. a) $26\sqrt{5} + 15\sqrt{6}$ b) $4e^2g^6\sqrt{7e}$ c) $\frac{5c\sqrt[3]{c^2}}{r^3}$ d) $6 - \sqrt{6}$ e) $-46 + 7\sqrt{11}$

f) $2a^2b^3 \cdot \sqrt[3]{15ab^2}$ g) $3g^5h^7\sqrt{7gh}$ h) $\frac{j\sqrt{6j}}{2k^3}$

3. a) $\frac{\sqrt{6xyz}}{3x^3yz^2}$ b) $\frac{11a^2\sqrt{25ab^2}}{5b^2}$ c) $\frac{5\sqrt{3km}}{6k^3m^6n^3}$ d) $\frac{28 - 4\sqrt{10}}{39}$ e) $\frac{16 + 11\sqrt{2}}{2}$ f) $\frac{3\sqrt[3]{4de^2}}{cd^3e^5}$

4. a) $7 \cdot \sqrt[5]{a^2}$ or $7(\sqrt[5]{a})^2$ b) $\sqrt[3]{6b}$ 5. a) $h^{\frac{4}{7}}$ b) $(5c)^{\frac{1}{2}}$ c) $8m^{\frac{3}{4}}$

6. a) $343k^2\sqrt{k}$ b) $8r^9$ c) $\frac{1}{9n^6}$ d) $x^{10}y^{12}$ e) $\frac{256m^3\sqrt[3]{m}}{n^8}$