Name_____ Period____ Date_____
Algebra 2: Worksheet A 2006-2007
Section 8.6

1) Rewrite the expression using rational exponents.

Example: $\sqrt[4]{15} = 15^{\frac{1}{4}}$

A) $\sqrt{20}$ B) $\sqrt[3]{5}$ C) $\sqrt[4]{12}$ D) $\sqrt[5]{30}$ E) $\sqrt[7]{100}$

2) Rewrite the expression using radical notation.

Example: $7^{\frac{1}{5}} = \sqrt[5]{7}$

A) $3^{\frac{1}{2}}$ B) $11^{\frac{1}{3}}$ C) $18^{\frac{1}{4}}$ D) $25^{\frac{1}{6}}$ E) $42^{\frac{1}{8}}$

3) Rewrite the expression using rational exponents.

Example: $(\sqrt[3]{6})^2 = 6^{\frac{2}{3}}$

A) $(\sqrt{9})^5$ B) $(\sqrt[3]{13})^4$ C) $(\sqrt[4]{17})^3$ D) $(\sqrt[5]{2})^3$ E) $(\sqrt{6})^7$

4) Rewrite the expression using radical notation.

Example: $22^{\frac{4}{5}} = (\sqrt[5]{22})^4$

A) $21^{\frac{2}{3}}$ B) $40^{\frac{5}{2}}$ C) $8^{\frac{2}{5}}$ D) $30^{\frac{3}{4}}$ E) $19^{\frac{5}{3}}$

5) Evaluate the expression without a calculator.

Example: $9^{\frac{1}{2}} = \sqrt{9} = 3$ Example: $(-8)^{\frac{4}{3}} = (\sqrt[3]{-8})^4 = (-2)^4 = 16$

Example: $25^{-\frac{3}{2}} = \frac{1}{25^{3/2}} = \frac{1}{(\sqrt{25})^3} = \frac{1}{5^3} = \frac{1}{125}$

A) $25^{\frac{1}{2}}$ B) $4^{\frac{3}{2}}$ C) $8^{\frac{2}{3}}$ D) $27^{\frac{2}{3}}$ E) $64^{\frac{2}{3}}$

F) $16^{\frac{3}{4}}$ G) $36^{\frac{1}{2}}$ H) $100^{\frac{3}{2}}$ I) $9^{\frac{3}{2}}$ J) $(-8)^{\frac{2}{3}}$

K) $(-27)^{\frac{2}{3}}$ L) $(-8)^{\frac{5}{3}}$ M) $(-8)^{\frac{4}{3}}$ N) $-8^{\frac{4}{3}}$ O) $(-32)^{\frac{3}{5}}$

P) $16^{-\frac{1}{2}}$ Q) $49^{-\frac{1}{2}}$ R) $4^{-\frac{3}{2}}$ S) $(-27)^{-\frac{1}{3}}$ T) $(-8)^{-\frac{2}{3}}$