

Name : _____ Score : _____

Teacher : _____ Date : _____

Radical and Rational Exponents

Write each expression in exponential form.

1) $(\sqrt[6]{15})^5$

2) $\frac{1}{(\sqrt[5]{5})^4}$

3) $(\sqrt[4]{2y})^3$

4) $(\sqrt[3]{15})^4$

Write each expression in radical form.

5) $(10b)^{\frac{4}{5}}$

6) $(11c)^{\frac{-6}{5}}$

7) $(3q)^{\frac{-2}{5}}$

8) $(13x)^{\frac{-2}{5}}$

Simplify.

9) $(3125)^{\frac{3}{5}}$

10) $(125)^{\frac{4}{3}}$

11) $(216)^{\frac{4}{3}}$

12) $(243h^{20})^{\frac{4}{5}}$



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Radical and Rational Exponents

Write each expression in exponential form.

$$1) \quad (\sqrt[6]{15})^5$$
$$(15)^{\frac{5}{6}}$$

$$2) \quad \frac{1}{(\sqrt[5]{5})^4}$$
$$(5)^{\frac{-4}{5}}$$

$$3) \quad (\sqrt[4]{2y})^3$$
$$(2y)^{\frac{3}{4}}$$

$$4) \quad (\sqrt[3]{15})^4$$
$$(15)^{\frac{4}{3}}$$

Write each expression in radical form.

$$5) \quad (10b)^{\frac{4}{5}}$$
$$(\sqrt[5]{10b})^4$$

$$6) \quad (11c)^{\frac{-6}{5}}$$
$$\frac{1}{(\sqrt[5]{11c})^6}$$

$$7) \quad (3q)^{\frac{-2}{5}}$$
$$\frac{1}{(\sqrt[5]{3q})^2}$$

$$8) \quad (13x)^{\frac{-2}{5}}$$
$$\frac{1}{(\sqrt[5]{13x})^2}$$

Simplify.

$$9) \quad (3125)^{\frac{3}{5}}$$
$$125$$

$$10) \quad (125)^{\frac{4}{3}}$$
$$625$$

$$11) \quad (216)^{\frac{4}{3}}$$
$$1296$$

$$12) \quad (243h^{20})^{\frac{4}{5}}$$
$$81h^{16}$$

