

Review #2

- \_\_\_ 1. Evaluate  $0.25^{\frac{1}{2}}$  without using a calculator.
- \_\_\_ 2. Evaluate  $(-27)^{\frac{1}{3}}$  without using a calculator.
- \_\_\_ 3. Evaluate  $\left(\frac{256}{625}\right)^{\frac{1}{4}}$  without using a calculator.
- \_\_\_ 4. Evaluate  $(-243)^{0.6}$ .
- \_\_\_ 6. Simplify  $\frac{12p^3q^{-7}}{15pq^6}$ . Write using powers with positive exponents.
- \_\_\_ 7. Simplify  $\left(\frac{36x^4y^3}{4x^8y^{-1}}\right)^{\frac{1}{2}}$ .
- \_\_\_ 8. Write  $\sqrt{\left(\frac{3}{4}\right)^9}$  as a power.
- \_\_\_ 9. Evaluate  $0.16^{\frac{5}{2}}$ .
- \_\_\_ 10. Given that  $6^{10} = 60\,466\,176$ , what is  $6^{-10}$ ?
- \_\_\_ 11. Simplify  $(64a^{12}b^{15})^{\frac{2}{3}}$ .
- \_\_\_ 12. Evaluate  $\left(-\frac{8}{5}\right)^{\frac{7}{4}} \cdot \left(-\frac{8}{5}\right)^{\frac{1}{4}}$ .

13. Evaluate  $\frac{1.2^{\frac{1}{3}}}{1.2^{\frac{4}{3}}}$ .

14. Evaluate  $\frac{\left(a^{-\frac{7}{2}} b^{\frac{10}{3}}\right)}{\left(a^{-5} b^4\right)}$  for  $a = 4$  and

15. Write  $\left(\frac{3}{4}\right)^{\frac{5}{6}}$  as a radical.

16. Write  $\left(\sqrt[6]{0.9}\right)^7$  as a power.

17. Evaluate  $(-64)^{\frac{2}{3}}$ .

18. Arrange these numbers in order from least to greatest.

$$12^{\frac{2}{7}}, \sqrt[6]{12^7}, 12^{\frac{1}{9}}, 12^{\frac{1}{7}}, \sqrt[7]{12^6}$$

19. Evaluate  $(-4)^{-4}$  without using a calculator.

20. Evaluate  $\left(\frac{8}{27}\right)^{-\frac{2}{3}}$  without using a calculator.

18. Arrange these numbers in order from least to greatest.

$$12^{\frac{9}{7}}, \sqrt[6]{12^7}, 12^{\frac{1}{9}}, 12^{\frac{1}{7}}, \sqrt[7]{12^6}$$

19. Evaluate  $(-4)^{-4}$  without using a calculator.

20. Evaluate  $\left(\frac{8}{27}\right)^{-\frac{2}{3}}$  without using a calculator.

21. Evaluate  $81^{-\frac{3}{4}}$  without using a calculator.

22. Evaluate  $(0.4)^{\frac{3}{2}} \cdot (0.4)^{\frac{1}{3}} \cdot (0.4)^{\frac{7}{6}}$ .

## Review # 2

$$1. (0.25)^{\frac{1}{2}}$$
$$\sqrt{0.25}$$
$$0.5$$

$$2. (-27)^{\frac{1}{3}}$$
$$\sqrt[3]{-27}$$
$$-3$$

$$3. \left(\frac{256}{625}\right)^{\frac{1}{4}}$$
$$\sqrt[4]{\frac{256}{625}}$$
$$\frac{4}{5}$$

$$4. (-243)^{0.6}$$
$$(-243)^{\frac{6}{10}}$$
$$(-243)^{\frac{3}{5}}$$
$$\sqrt[5]{-243}^3$$
$$(3)^3$$
$$-27$$

$$5. \text{☺}$$

$$6. \frac{12p^3q^{-7}}{15p^2q^6}$$

$$\frac{4p^2q^{-13}}{5q}$$

$$\frac{4p^2}{5q^{13}}$$

$$7. \left( \frac{36x^4y^3}{4x^8y^{-1}} \right)^{1/2}$$

$$(9x^{-4}y^4)^{1/2}$$

$$9^{1/2} x^{-4/2} y^{4/2}$$

$$9^{1/2} x^{-2} y^2$$

$$\frac{9^{1/2} y^2}{x^2}$$

$$\frac{3y^2}{x^2}$$

$$8. \sqrt{\left(\frac{3}{4}\right)^9}$$
$$\left(\frac{3}{4}\right)^{9/2}$$

$$9. 0.16^{5/2}$$
$$(\sqrt{0.16})^5$$
$$(0.4)^5$$
$$0.01024$$

$$10. 6^{10} = 60466176$$

$$6^{-10} = \frac{1}{60466176}$$

$$11. (64a^{12}b^{15})^{2/3}$$

$$64^{2/3} a^{24/3} b^{30/3}$$

$$64^{2/3} a^8 b^{10}$$

$$\sqrt[3]{64}^2 a^8 b^{10}$$

$$4^2 a^8 b^{10}$$

$$16 a^8 b^{10}$$

$$12. \left(-\frac{8}{5}\right)^{7/4} \left(-\frac{8}{5}\right)^{1/4}$$

$$\left(-\frac{8}{5}\right)^{8/4}$$

$$\left(-\frac{8}{5}\right)^2$$

$$= \frac{64}{25}$$

$$\frac{7}{4} + \frac{1}{4}$$

$$\frac{8}{4}$$

$$= 2$$

7 a b

16 a<sup>8</sup> b<sup>10</sup>

13.  $\frac{1.2^{1/3}}{1.2^{4/3}}$

$1.2^{-1}$

$\frac{1}{1.2^1}$

14.  $\frac{(a^{-7/2} b^{10/3})}{(a^{-5} b^4)}$

$a^{-7/2} b^{-2/3}$

$\frac{a^{3/2}}{b^{2/3}}$

$\frac{-7-5}{2} = -1$

$\frac{-7-10}{3} = -23$

$\frac{10-4}{3} = \frac{6}{3} = 2$

$\frac{10-12}{3} = \frac{-2}{3}$



15.  $\left(\frac{3}{4}\right)^{5/6}$

$\sqrt[6]{\frac{3}{4}^5}$

16.  $(\sqrt[6]{0.9})^7$

$0.9^{7/6}$

17.  $(-64)^{2/3}$

$\sqrt[3]{-64}^2$

$(-4)^2$

16

18.

$12^{9/7}, \sqrt[7]{12^9}, 12^{1/9}, 12^{1/7}, \sqrt[7]{12}$

$12^{9/17}, 12^{7/6}, 12^{4/9}, 12^{1/7}, 12^{6/7}$

Least

Greatest

$12^{4/9}, 12^{1/7}, 12^{6/7}, 12^{7/6}, 12^{9/7}$

19.  $(-4)^{-4}$

$$\frac{1}{(-4)^4}$$
$$\frac{1}{256}$$

20.  $\left(\frac{8}{27}\right)^{-2/3}$

$$\left(\frac{27}{8}\right)^{2/3}$$
$$\sqrt[3]{\frac{27}{8}}^2$$
$$\left(\frac{3}{2}\right)^2$$
$$\frac{9}{4}$$

