

Review # 2

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

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

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

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

$$-27$$

$$5. \quad \text{☺}$$

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

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

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

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

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

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

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

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

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

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

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

$$9. 0.16^{5/2}$$

$$(\sqrt{0.16})^5$$

$$(0.4)^5$$

$$0.01024$$

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

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

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

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

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

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

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

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

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

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

$$= 2$$

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

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

$$13. \frac{1.2^{4/3}}{1.2^{11/3}}$$

$$\frac{1}{3} - \frac{4}{3}$$

$$-\frac{3}{3}$$

$$-1$$

$$1.2^{-1}$$

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

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

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

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

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

$$\frac{-7-(-5)}{2}$$

$$\frac{-7-10}{2}$$

$$\frac{-17}{2}$$

$$\frac{10-4}{2}$$

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

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

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

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

$$0.9^{7/6}$$

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

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

$$(-4)^2$$

$$16$$

18.

$$12^{9/17}, \sqrt[17]{12^9}, 12^{1/9}, 12^{1/7}, \sqrt[7]{12^6}$$

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

Least

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

Greatest

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

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

$$\frac{-1}{256}$$

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

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

$$\sqrt[3]{\frac{27}{8}}^2$$

$$\left(\frac{3}{2}\right)^2$$

$$\frac{9}{4}$$

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

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

$$21. \quad 81^{-3/4}$$

$$\frac{1}{81^{3/4}}$$

$$\frac{1}{\sqrt[4]{81^3}}$$

$$\frac{1}{3^3}$$

$$\frac{1}{27}$$

22.

$$(0.4)^{3/2} \cdot (0.4)^{1/3} \cdot (0.4)^{1/6}$$

(Add exponents)

$$(0.4)^{3/2 + 1/3 + 1/6}$$

$$(0.4)^{9/6 + 2/6 + 1/6}$$

$$(0.4)^{12/6}$$

$$(0.4)^3$$

$$0.064$$

$$1) \quad \frac{2x \cdot y \cdot 5yx}{10x^2y^2}$$

$$2) \quad \frac{7y \cdot 5xy \cdot 5x}{175x^2y^2}$$

$$3) \quad \frac{3x^2 \cdot (4y^3)^4}{(3yx^2)^2}$$

$$\frac{3x^2 \cdot 4^4 y^{12}}{3^2 y^2 x^4}$$

$$\frac{3x^2 \cdot 256y^{12}}{9y^2x^4} = \frac{768x^2y^{12}}{9y^2x^4}$$

$$= \frac{256x^{-2}y^{10}}{3}$$

$$5) \quad \frac{3vu^4}{(2u^2 \cdot vu^4)^3}$$

$$= \frac{3vu^4}{(2u^6v)^3}$$

$$\frac{3vu^4}{3v^3u^{18}}$$

$$= \frac{256y^{10}}{3x^2}$$

$$4) \quad \left(\frac{2xy^4}{4x^3 \cdot 3yx^4 \cdot xy^3} \right)^2$$

$$\left(\frac{2xy^4}{12x^8y^4} \right)^2$$

$$\left(\frac{1x^{-7}y^0}{6} \right)^2$$

$$\frac{1^2 x^{-14} y^0}{6^2} = \frac{1}{36x^{14}}$$

$$6) \quad \frac{(3x^4y^2)^2}{x^2 \cdot 2yx^2}$$

$$\frac{3^2 x^8 y^4}{2x^4 y}$$

$$\frac{9x^4 y^3}{2x^4 y}$$

$$5) \frac{3vu^4}{(2u^2 \cdot vu^4)^3}$$

$$= \frac{3vu^4}{(2u^6v)^3}$$

$$= \frac{3vu^4}{2^3 u^{18} v^3}$$

$$= \frac{3vu^4}{8u^{18}v^3} = \frac{3}{8} v^{-2} u^{-14}$$

$$\frac{256xy^{10}}{3x^2}$$

$$7) \frac{p^{-3} \cdot 3p^{-3}}{(p^3)^3}$$

$$= \frac{3p^{-6}}{p^9}$$

$$= 3p^{-15}$$

$$= \frac{3}{p^{15}}$$

$$= \frac{3}{8v^2u^{14}}$$

$$9) \frac{(a^2b^{-3})^2}{a^{-4} \cdot 3a^{-3}b^2}$$

$$= \frac{a^4b^{-6}}{3a^{-7}b^2}$$

$$6) \frac{(3x^4y^2)^2}{x^2 \cdot 2yx^2}$$

$$= \frac{3^2 x^8 y^4}{2x^4 y}$$

$$= \frac{9x^4 y^3}{2}$$

$$8) \frac{3x^2 \cdot 3x^3}{(x^2)^{-1}}$$

$$= \frac{9x^5}{x^{-2}}$$

$$= 9x^7$$

$$10) \left(\frac{3x^{-3}y^2 \cdot 4yx^{-3}}{4x^{-2}y^2} \right)^{-3}$$

$$= \left(\frac{12x^{-6}y^3}{4x^{-2}y^2} \right)^{-3}$$

$$(9) \frac{(a^2 b^{-3})^2}{a^{-4} \cdot 3a^{-3} b^2}$$

$$\frac{a^4 b^{-6}}{3 a^{-7} b^2}$$

$$\frac{1 a^{11} b^{-8}}{3}$$

$$\frac{1 a^{11}}{3 b^8}$$

$$(10) \left(\frac{3x^{-3} y^2 \cdot 4yx^{-3}}{4x^{-2} y^2} \right)^{-3}$$

$$\left(\frac{12x^{-6} y^3}{4x^{-2} y^2} \right)^{-3}$$

$$(3x^{-4} y^1)^{-3}$$

$$\frac{3^{-3} x^{12} y^{-3}}{1}$$

$$\frac{x^{12}}{3^3 y^3}$$