

2. Evaluate each power without a calculator. (6 marks)

a. 5^{-2}	b. 3^{-4}
c. $(-2)^{-2}$	d. -2^{-2}
e. $\left(\frac{4}{5}\right)^{-2}$	f. $\left(-\frac{1}{3}\right)^{-3}$

3. Simplify. Express all answers with only positive exponents. (4 marks)

a. $\left(\frac{x}{y}\right)^3$	b. $\left(\frac{a^2}{b^4}\right)^{-3}$
c. $(xy)^7$	d. $(a^3b^4)^{-2}$

4. Simplify. Express all answers with only positive exponents. (4 marks)

a. $a^{-2}b^5$	b. $x^4 \cdot x^{-3} \cdot x^5$
c. $\frac{x^{-2}}{x^{-4}}$	d. $\frac{y^{-5}}{y^2}$

5. Write as a single power with positive exponents. (2 marks)

a. $\left[\left(\frac{2}{7}\right)^3\right]^2$

b. $\left[\left(\frac{3}{5}\right)^{-2}\right]^2$

Section Assignment 2.2 Part 3
Rational Exponents

1. Evaluate without using a calculator. (3 marks)

a. $27^{\frac{3}{3}}$

b. $27^{\frac{4}{3}}$

c. $27^{\frac{5}{3}}$

2. Write each radical as a power. (3 marks)

a. $\sqrt{6^3}$

b. $(\sqrt[4]{-2})^5$

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

d. $\left(\sqrt{\frac{5}{8}}\right)^2$

e. $\sqrt[3]{\left(\frac{3}{4}\right)^4}$

f. $\sqrt[5]{(-4)^3}$

3. Arrange in order from least to greatest. (4 marks)

$$\left(\frac{1}{3}\right)^{\frac{5}{2}} \quad 3^2 \quad 3^{\frac{5}{2}} \quad \sqrt[3]{3}$$

4. Simplify. Write your answers with positive exponents. (4 marks)

a. $x^{\frac{3}{2}} \cdot x^{\frac{5}{2}}$

b. $x^{-\frac{5}{2}} \div x^{\frac{1}{2}}$

c. $\frac{-12x^{-3}y^{\frac{3}{2}}}{4x^2y^{-\frac{1}{4}}}$

d. $\left(\frac{-27x^9}{y^{12}z^{-\frac{1}{3}}}\right)^{\frac{1}{3}}$

5. Simplify. Write your answers with positive exponents. (6 marks; 2 marks each)

a.
$$\frac{3m^2n^3z}{6m^{-1}n^2z^2} \cdot \left(\frac{m^3n}{2z}\right)^0$$

b.
$$\left(\frac{2x^2}{7}\right)^2 \cdot \left(\frac{y}{2b^3}\right)^3$$

c.
$$\left(\frac{x^{-7}y^7}{x^{-9}y^{10}}\right)^{-3}$$