

Name: _____

Radical Functions

Exercise 1: Simplify each expression:

a) $\sqrt{49a^{10}}$

b) $\sqrt{32x^6y^{10}}$

c) $\sqrt{(x+2)^2}$

d) $\sqrt[3]{8a^{15}}$

e) $32^{1/5}$

f) $\left(\frac{81}{25}\right)^{1/2}$

g) $(x^5y^5)^{2/5}$

h) $\left(\frac{16}{81y^4}\right)^{-3/4}$

i) $(t^{4/5})^{10}$

j) $\frac{p^{5/6}}{7p^{2/3}}$

Exercise 2: Write each of the expressions in simplified form:

1) $\sqrt[3]{24}$

2) $\sqrt{\frac{49}{100}}$

3) $\frac{\sqrt{54xy}}{\sqrt{6y}}$

4) $\sqrt{27}$

5) $\sqrt{\frac{4v}{81u^4}}$

6) $\sqrt[3]{40x^4y^7}$

7) $\sqrt{48a^2b^3c^5}$

8) $\sqrt[5]{\frac{p^2}{32q^5r^{10}}}$

9) $\sqrt[3]{-54x^2y^5}$

10) $\sqrt{98xy^3}$

11) $\sqrt[3]{343x^8y^3z^{12}}$

12) $\sqrt{x^2 - 6x + 9}$

13) $\sqrt[3]{40a^7}$

14) $\frac{\sqrt[6]{729m^{12}}}{\sqrt[6]{64n^{18}}}$

15) $\frac{\sqrt[4]{176x^8y^{11}}}{\sqrt[3]{8y^3m^6}}$

16) $\frac{\sqrt[3]{375p^3q^{10}}}{\sqrt[5]{32q^5p^{10}}}$

17) $\frac{\sqrt[6]{320m^6c^{12}d}}{\sqrt[5]{243c^5d^{10}}}$