

Mathematics 101 Worksheet 6.1-6.3

Problems

1) True or False.

a) The principal n th root of an odd-indexed root is always positive.

b) $\sqrt{(-3)^2} = -3$

c) $\sqrt{a^2 + b^2} = a + b$

d) $\sqrt{(a + b)^2} = |a + b|$

2) Simplify.

a) $\sqrt{\frac{25}{4}}$

b) $-\sqrt[3]{-1000}$

c) $\sqrt{-16}$

d) $\sqrt{x^2}$

e) $(-64)^{\frac{1}{3}}$

f) $16^{-\frac{1}{4}}$

g) $\left(\frac{a^{12}b^{-4}c^7}{a^3b^2c^4}\right)^{\frac{1}{3}}$

h) $\sqrt{108}$

i) $\sqrt[4]{x^5yz^4}$

j) $\sqrt[3]{\frac{-16a^4}{2ab^3}}$

3) Evaluate.

a) $8^{\frac{2}{3}}$

b) $(-8)^{\frac{2}{3}}$

c) $-8^{\frac{2}{3}}$

d) $8^{-\frac{2}{3}}$

e) $(-8)^{-\frac{2}{3}}$

f) $-8^{-\frac{2}{3}}$