D: Express each power as a radical. Evaluate questions b and c.

a) $4^{\frac{2}{3}}$ $\sqrt[3]{4^2}$ b) $7^{\frac{1}{2}}$ $\sqrt{7}$ c) $81^{\frac{5}{4}}$ $\sqrt[4]{81^5}$

d) $x^{\frac{m}{n}}$ $\sqrt[n]{x^m}$ e) $\left(\frac{1}{9}\right)^{\frac{1}{9}}$ $\sqrt[9]{1/9}$ f) $(-2)^{\frac{4}{3}}$ $\sqrt[3]{-2^4}$

E: Express each radical as a power.

a) $\sqrt{m^3}$ $m^{3/2}$ b) $\sqrt[3]{5^4}$ $5^{4/3}$ c) $\sqrt[7]{5^3}$ $5^{3/7}$

d) $\sqrt[3]{x^8}$ $x^{8/3}$ e) $\sqrt[n]{8}$ $8^{1/n}$ f) $\sqrt[5]{y^3}$ $y^{3/5}$

F: A cube has a volume of 350 cm³. Write as a radical and as a power.

G: Express as a mixed radical.

5 3 3 3

a) $\sqrt{63}$ $3\sqrt{7}$ b) $\sqrt{108}$ $6\sqrt{3}$ c) $\sqrt[3]{135}$ $3\sqrt[3]{5}$

3 3 3 3 1 7

d) $\sqrt{175}$ $5\sqrt{7}$ e) $\sqrt{96}$ $4\sqrt{6}$ f) $2\sqrt[3]{24}$ $4\sqrt[3]{3}$

5 5 7 16 6 6 4 2 3 2 2

H: Express as an entire radical.

a) $4\sqrt{7}$ $\sqrt{112}$ b) $3\sqrt[3]{2}$ $\sqrt[3]{54}$ c) $3\sqrt{3125}$ $\sqrt{28125}$

d) $5\sqrt{6}$ $\sqrt{150}$ e) $5\sqrt[3]{2}$ $\sqrt[3]{250}$ f) $3\sqrt[4]{2}$ $\sqrt[4]{162}$

I: Name the set of numbers to which each number belongs: Natural, Whole, Integer , Rational, Irrational, Real.

a) $-\sqrt{144}$ R, Rat I b) -5 R, Rat I c) $\sqrt[3]{27}$ R, Rat W, N, I

d) 4.2 R, Rat e) 7.1213..... R, Ir f) .363636... R, Rat

g) $0.3\overline{6}$ R, Rat h) .989889888... R, Ir i). π R, Ir

J: Arrange the following radicals in order on the number line:

$\sqrt[3]{70}$ $\sqrt{50}$ $\sqrt[4]{100}$ $\sqrt[3]{400}$

4.12 7.07 3.16 7.37