

Chapter 4 Puzzle

How Irrational Is It?

The radical $\sqrt{26}$ and the power $2^{\frac{3}{2}}$ went to a bank to apply for credit cards.

"I'm sorry," said the bank manager, "You may not have credit cards."

"Why not?," asked the radical and power, "Is it because we are irrational?"

Why did the bank manager not give them credit cards?

To find out, evaluate or simplify each expression below.

Then, write the matching letter above the matching answer on the underline below.

$$\sqrt[3]{-8} = \underline{-2} = U = -2$$

$$4^{\frac{3}{2}} = \underline{2^3} = E = 8$$

$$2^{\frac{1}{2}} = \underline{\sqrt{2}} = H = \sqrt{2}$$

$$5^{-3} = \underline{\frac{1}{5^3}} = Y = \frac{1}{125}$$

$$3^{\frac{2}{3}} = \underline{\sqrt[3]{3^2}} = A = \sqrt[3]{9}$$

$$\left(\frac{3}{4}\right)^{-2} = \underline{\left(\frac{4}{3}\right)^2} = N = \frac{16}{9}$$

$$2^{-5} \cdot 2^4 = \underline{2^{-1}} = R = \frac{1}{2}$$

$$\frac{5^{-3} \cdot 5^4}{5^{-2}} = \underline{5^3} = I = 125$$

$$\left(\frac{2}{4}\right)^3 = \underline{4^{\frac{6}{3}} = 4^2} = G = 16$$

$$7^{\frac{1}{2}} \cdot 7^{\frac{1}{4}} = \underline{7^{\frac{3}{4}}} = T = \sqrt[4]{7^3}$$

$$\left(2^{\frac{1}{3}} \cdot 2^{\frac{1}{2}}\right)^6 = \underline{(2^{\frac{5}{6}})^6} = D = 2^5 = 32$$

$$\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$

$$\frac{1}{3} + \frac{1}{2} = \frac{2}{6} + \frac{3}{6} = \frac{5}{6}$$

$$\frac{I}{\sqrt[4]{7^3}} \quad \frac{H}{\sqrt{2}} \quad \frac{E}{8} \quad \frac{Y}{\frac{1}{125}} \quad \frac{A}{\sqrt[3]{9}} \quad \frac{R}{\frac{1}{2}} \quad \frac{8}{8} \quad \frac{U}{-2} \quad \frac{N}{\frac{16}{9}} \quad \frac{D}{32} \quad \frac{E}{8} \quad \frac{R}{\frac{1}{2}}$$

$$\frac{E}{8} \quad \frac{I}{125} \quad \frac{G}{16} \quad \frac{H}{\sqrt{2}} \quad \frac{T}{\sqrt[4]{7^3}} \quad \frac{E}{8} \quad \frac{E}{8} \quad \frac{N}{\frac{16}{9}}$$