Math Diversion Problem 523

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> There still remains one point to be cleared up. One of the
> most fundamental questions has not been settled as yet:
> does an inertial system exist? We have learned
> something about the laws of nature, their invariance
> with respect to Lorentz transformation, and their
> validity for all inertial systems moving uniformly
> relative to each other. We have the laws
> but we do not know the frame
> to which to refer them.
> — Albert Einstein
> (Hilarious!)

The YouTube video is found at:

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 Source: https://www.youtube.com/shorts/et7_N2S79xU
Title: How fast can you crack this ricky SAT question?
Presenter:  Your SAT Coach
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1 The Problem

Given the relation

$$2 = p^3\,, \tag{1}$$

find the value of $8p$. Choices:

A) p^6

B) p^8

C) p^{10}

D) $8\sqrt{2}$

2 The Solution

The straightforward solving of (1) gives

$$p = 2^{1/3}\,. \tag{2}$$

Therefore,

$$8p = 8\sqrt[3]{2}\,, \tag{3}$$

which clearly eliminates Choice D). Observing the rest of the choices, it's clear that we are to find the solution in the form p^n for $n \in \{6, 8, 10\}$. So,

$$8p = 8 \cdot 2^{1/3} = 2^3 \cdot 2^{1/3} = 2^{10/3} = (2^{1/3})^{10} = p^{10}\,. \tag{4}$$

So the answer is C).