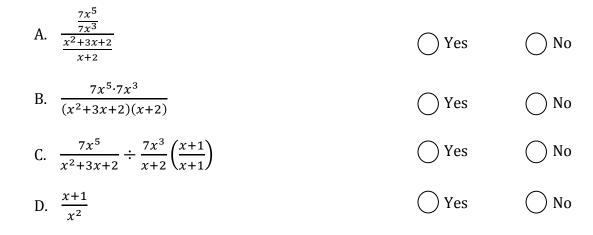Choose Yes or No to indicate which of the following expressions are equivalent to $\dfrac{7x^5}{x^2+3x+2} \div \dfrac{7x^3}{x+2}$.

A. $\dfrac{\frac{7x^5}{7x^3}}{\frac{x^2+3x+2}{x+2}}$ ◯ Yes   ◯ No

B. $\dfrac{7x^5 \cdot 7x^3}{(x^2+3x+2)(x+2)}$ ◯ Yes   ◯ No

C. $\dfrac{7x^5}{x^2+3x+2} \div \dfrac{7x^3}{x+2}\left(\dfrac{x+1}{x+1}\right)$ ◯ Yes   ◯ No

D. $\dfrac{x+1}{x^2}$ ◯ Yes   ◯ No

E. $\dfrac{7x^5 \div 7x^3}{[(x+1)(x+2)] \div (x+2)}$ ◯ Yes   ◯ No

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Scoring:
2 points: Selected A, C and E only.
1 point: Selected either A and C, A and E, or C and E only.
                    Selected two correct answers and only one other wrong answer.
0 points: Any other combination.

Key and Distractor Analysis:
A. Key. Made the expression into a complex fraction.
B. Student probably confused multiplying by the reciprocal.
C. Key. Multiplying the second fraction by an equivalent form of one to create common denominators.
D. Student might have multiplied by the reciprocal of the first fraction.
E. Key. Student is dividing numerators and dividing denominators.

Arithmetic with Polynomials and Rational Expressions   A.APR

Rewrite Rational Expressions

1. Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.