Watch. Practice. Understand. | Lesson 249

The Secret of Decomposing Complicated Rational Expression Into Partial Fractions (Pre ...

Watch the matching video: https://www.youtube.com/watch?v=AKM64TaJIto

Practice focus: Partial fractions

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 Decompose $5/((x + 1)(x + 2))$.

02 Decompose $(3x + 5)/((x + 1)(x + 2))$.

03 State the proper partial-fraction form for $1/(x(x + 1)^2)$.

04 State the proper form for $(x + 1)/((x - 2)(x^2 + 1))$.

Worked answers | Lesson 249

The Secret of Decomposing Complicated Rational Expression Into Partial Fractions (Pre ...

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Practice focus: Partial fractions

Original extra practice matched to the listed lesson topic.

01 Decompose $5/((x + 1)(x + 2))$.

$5 = A(x + 2) + B(x + 1)$. At $x=-1$, $A=5$; at $x=-2$, $B=-5$. Result $5/(x+1) - 5/(x+2)$.

02 Decompose $(3x + 5)/((x + 1)(x + 2))$.

$A + B = 3$ and $2A + B = 5$, so $A = 2$ and $B = 1$. Result $2/(x+1) + 1/(x+2)$.

03 State the proper partial-fraction form for $1/(x(x + 1)^2)$.

$A/x + B/(x+1) + C/(x+1)^2$; repeated linear factors need every power.

04 State the proper form for $(x + 1)/((x - 2)(x^2 + 1))$.

$A/(x - 2) + (Bx + C)/(x^2 + 1)$; an irreducible quadratic needs a linear numerator.