



MATHS

BOOKS - PEARSON IIT JEE FOUNDATION

PARTIAL FRACTIONS

Example

1. Resolve $\frac{3x + 5}{(x + 2)(3x - 1)}$ into partial fractions.



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2. Resolve $\frac{2x^2 + 5x - 1}{x^2 - 3x - 10}$ into partial fractions.



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3. Resolve $\frac{2x^2 - 5x + 7}{(x + 1)^2(x + 3)(2x + 1)}$ into partial fractions.

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4. Resolve $\frac{2x - 5}{(x + 2)(x^2 - x + 5)}$ into partial fractions.

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5. Resolve $\frac{2x + 1}{(x + 3)(x^2 + 1)^2}$ into partial fractions.

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6. Resolve $\frac{3x^2 - 3x - 11}{(x + 3)(3x + 4)^2}$ into partial fractions.

A. $\frac{1}{x + 3} + \frac{2}{3x + 4} - \frac{1}{(3x + 4)^2}$

B. $\frac{1}{x + 3} - \frac{2}{3x + 4} - \frac{1}{(3x + 4)^2}$

C. $\frac{1}{x + 3} + \frac{2}{3x + 4} - \frac{1}{2(3x + 4)^2}$

D. None of these

Answer:



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7. If $\frac{x}{(x - 1)(x^2 + 1)^2} = \frac{P}{x - 1} + \frac{Qx + R}{x^2 + 1} + \frac{Sx + T}{(x^2 + 1)^2}$,

then $P + Q - R - S + T =$ _____.

A. $\frac{5}{4}$

B. $\frac{3}{2}$

C. $\frac{9}{7}$

D. $\frac{8}{9}$

Answer:



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8. If $\frac{9x - 13}{x^2 - 2x - 15} = \frac{A}{x + 3} + \frac{B}{x - 5}$, then $A + B$ is _____.

A. 9

B. 13

C. 12

D. 8

Answer:



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9. Resolve $\frac{x}{(x-2)(x^2+3)^2}$ into partial fractions.

- A. $\frac{1}{49} \left[\frac{2}{x-2} - \frac{2x+4}{x^2+3} + \frac{12-2x}{(x^2+3)^2} \right]$
- B. $\frac{1}{49} \left[\frac{2}{x-2} - \frac{2x+4}{x^2+3} - \frac{12-2x}{(x^2+3)^2} \right]$
- C. $\frac{1}{49} \left[\frac{2}{x-2} + \frac{2x+4}{x^2+3} - \frac{12-2x}{(x^2+3)^2} \right]$
- D. $\frac{1}{49} \left[\frac{2}{x-2} - \frac{2x+4}{x^2+3} + \frac{21-14x}{(x^2+3)^2} \right]$

Answer:



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10.

If

$$\frac{1}{(1-x)(1-2x)(1-3x)} = \frac{A}{(1-x)} + \frac{B}{(1-2x)} + \frac{C}{(1-3x)}$$

, then $A + B + C =$ _____.

A. 0

B. 1

C. -1

D. 2

Answer:



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Very Short Answer

1. Improper fraction is a fraction in which the degree of the numerator is _____ than or equal to the degree of denominator.

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2. The partial fraction of $\frac{Ax + B}{x^4}$ has _____ terms.

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3. A proper fraction is one in which the degree of numerator is _____ than the degree of denominator.

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4. A proper fraction may be written as the sum of _____.



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5. The number of terms of the partial fraction of $\frac{x^3}{(x-1)(2x-3)(x-4)}$ is _____.



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6. The partial fraction of $\frac{2(x^2+1)}{x^3-1}$ is $\frac{1}{x-1} - \frac{f(x)}{g(x)}$. Then the degree of $f(x)$ is _____.



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7. If $\frac{x^2 - 2x - 9}{(x^2 + x + 6)(x + 1)} = \frac{2x - 3}{x^2 + x + 6} + \frac{A}{x + 1}$, then A is _____.

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8. If the partial fractions of $\frac{3x^2 + 4}{(x - 1)^3}$ is $\frac{3}{x - 1} + \frac{A}{(x - 1)^2} + \frac{7}{(x - 1)^3}$, then $A =$ _____.

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9. If $\frac{f(x)}{x^2 - x + 1} - \frac{1}{f(x)}$ is the partial fraction of $\frac{3x}{x^3 + 1}$, then $f(x)$ is _____.

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10. If
$$\frac{ax^2 + bx + c}{(x + 1)(x^2 - 3x - 4)} = \frac{f(x)}{x + 1} + \frac{g(x)}{x + 4} + \frac{h(x)}{x - 1},$$

then the degree of $f(x)$, $g(x)$ and $h(x)$ is _____.



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11. If

$$\frac{2x^2 + 3x + 4}{(x + 2)^4} = \frac{A}{(x + 2)} + \frac{2}{(x + 2)^2} - \frac{5}{(x + 2)^3} + \frac{6}{(x + 2)^4}$$

, then $A =$ _____.



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12. If
$$\frac{x^2}{(x - a)(x - b)} = 1 + \frac{a^2}{(a - b)(x - a)} + \frac{B}{(x - b)},$$

then B is _____.



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13. If $\frac{x^4}{(x+1)(x+2)} = f(x) + \frac{A}{x+1} + \frac{B}{x+2}$, then the degree of the polynomial $f(x)$ is _____.

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Short Answer

1. Resolve into partial fractions : $\frac{1}{x^2 - a^2}$.

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2. Resolve into partial fractions : $\frac{2x + 5}{x^2 + 3x + 2}$.

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3. Resolve into partial fractions : $\frac{3x + 4}{x^2 + x - 12}$.

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4. Resolve into partial fractions : $\frac{2x^2 + 5x + 8}{(x - 2)^3}$.

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5. Resolve into partial fractions : $\frac{x + 1}{(x + 2)(x^2 + 4)}$.

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6. Find the value of A , B and C if

$$\frac{2x^2 - x - 10}{(x - 2)^3} = \frac{A}{(x - 2)} + \frac{B}{(x - 2)^2} + \frac{C}{(x - 2)^3}.$$



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7. If $\frac{x + 5}{(x - 1)^2} = \frac{A}{(x - 1)} + \frac{B}{(x - 1)^2}$, then find the values of A and B .



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8. Find the partial fractions of $\frac{ax + b}{(x - 1)^2}$, where a and b are constants.



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9. Resolve into partial fractions : $\frac{2x^2 - 3x + 3}{x^3 - 2x^2 + x}$.



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10. Resolve into partial fractions : $\frac{x^2 + 5x + 6}{x^3 - 7x - 6}$.

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11. Resolve into partial fractions : $\frac{x^3}{(x + 1)(x + 2)}$.

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12. Resolve into partial fractions : $\frac{x + 1}{x^3 - 1}$.

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13. Resolve into partial fractions : $\frac{2x^2 + 4}{x^4 + 5x^2 + 4}$.



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14. Find the partial fractions of $\frac{2x + 3}{x^4 + x^2 + 1}$.

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15. Resolve into partial fractions : $\frac{1}{x^4 + x}$.

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Essay

1. Resolve into partial fractions : $\frac{3x^2 + 4x + 5}{x^3 + 9x^2 + 26x + 24}$

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2. Resolve into partial fractions : $\frac{x^2x - 1}{x^4 + x^2 + 1}$.

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3. Resolve into partial fractions : $\frac{3x + 4}{x^3 - 2x - 4}$.

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4. Resolve into partial fractions : $\frac{x^2 - 3}{x^3 - 2x^2 - x + 2}$.

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5. Resolve into partial fractions : $\frac{x^4 + 1}{(x - 2)(x + 2)}$

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Level 1

1. Resolve $\frac{1}{x^2 - 9}$ into partial fractions.

A. $\frac{1}{3(x - 3)} - \frac{1}{3(x + 3)}$

B. $\frac{1}{2(x - 3)} - \frac{3}{2(x + 3)}$

C. $\frac{1}{6(x - 3)} - \frac{1}{6(x + 3)}$

D. $\frac{1}{6(x - 3)} + \frac{1}{6(x + 3)}$

Answer:



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2. Resolve $\frac{2x + 3}{x^2 - 6x + 5}$ into partial fractions.

$$\text{A. } \frac{1}{4} \left(\frac{13}{x-5} - \frac{5}{x-1} \right)$$

$$\text{B. } \frac{5}{x-5} - \frac{13}{4(x-1)}$$

$$\text{C. } \frac{13}{5(x-1)} - \frac{4}{5(x-5)}$$

$$\text{D. } \frac{5}{x-5} - \frac{4}{(x-1)}$$

Answer:



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3. Resolve $\frac{x^2 + x + 1}{(x-1)^3}$ into partial fractions.

$$\text{A. } \frac{1}{x-1} + \frac{1}{(x-1)^2} + \frac{1}{(x-1)^3}$$

$$\text{B. } \frac{1}{(x-1)} + \frac{2}{(x-1)^2} + \frac{1}{(x-1)^3}$$

$$\text{C. } \frac{1}{x-1} + \frac{3}{(x-1)^2} + \frac{3}{(x-1)^3}$$

$$\text{D. } \frac{2}{x-1} + \frac{3}{(x-1)^2} + \frac{3}{(x-1)^3}$$

Answer:



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4. Resolve $\frac{3x + 2}{x^2 + 5x + 6}$ into partial fractions.

A. $\frac{7}{(x + 2)} + \frac{4}{(x + 3)}$

B. $\frac{4}{(x + 3)} + \frac{8}{(x + 2)}$

C. $\frac{4}{(x + 3)} - \frac{7}{(x + 2)}$

D. $\frac{7}{(x + 3)} - \frac{4}{(x + 2)}$

Answer:



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5. Resolve $\frac{1}{x^2 + x + 42}$ into partial fractions.

A. $\frac{1}{13(x - 6)} + \frac{1}{13(x + 7)}$

B. $\frac{1}{(x - 7)} + \frac{1}{(x - 6)}$

C. $\frac{1}{(x - 7)} - \frac{1}{(x - 6)}$

D. $\frac{1}{13(x - 6)} - \frac{1}{13(x + 7)}$

Answer:



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6. Resolve $\frac{x^2 + 4x + 6}{(x^2 - 1)(x + 3)}$ into partial fractions.

A. $\frac{11}{8(x - 1)} - \frac{3}{21(x - 1)} + \frac{3}{8(x + 3)}$

B. $\frac{11}{8(x - 1)} - \frac{3}{4(x - 1)} + \frac{3}{8(x + 3)}$

$$C. \frac{11}{4(x+1)} - \frac{3}{8(x+1)} + \frac{3}{8(x+3)}$$

$$D. \frac{11}{8(x-1)} - \frac{3}{4(x+1)} + \frac{3}{8(x+3)}$$

Answer:

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7. Resolve $\frac{x+1}{x(x-1)(x+3)}$ into partial fractions.

$$A. \frac{-1}{3x} + \frac{1}{2(x-1)} - \frac{1}{6(x+3)}$$

$$B. \frac{1}{3x} + \frac{1}{2(x-1)} - \frac{1}{6(x+3)}$$

$$C. \frac{1}{3x} - \frac{1}{2(x-1)} + \frac{1}{6(x+3)}$$

$$D. \frac{1}{2x} - \frac{1}{3(x-1)} + \frac{1}{6(x+3)}$$

Answer:

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8. Resolve $\frac{1}{x^2 - (a + b)x + ab}$ into partial fractions.

A. $\frac{1}{a + b} \left[\frac{1}{x - a} + \frac{1}{x - b} \right]$

B. $\frac{1}{a + b} \left[\frac{1}{x - a} - \frac{1}{x - b} \right]$

C. $\frac{1}{a - b} \left[\frac{1}{x - a} + \frac{1}{x - b} \right]$

D. $\frac{1}{a - b} \left[\frac{1}{x - a} - \frac{1}{x - b} \right]$

Answer:



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9. Resolve $\frac{1}{x^2 - 5x + 6}$ into partial fractions.

A. $\frac{1}{x - 3} - \frac{1}{x - 2}$

$$\text{B. } \frac{1}{x-2} + \frac{1}{x-3}$$

$$\text{C. } \frac{1}{x-3} + \frac{1}{x-2}$$

$$\text{D. } \frac{2}{x-3} + \frac{2}{x-2}$$

Answer:



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10. Resolve $\frac{x+2}{x^2-2x-15}$ into partial fractions.

$$\text{A. } \frac{7}{8(x-5)} + \frac{1}{8(x+3)}$$

$$\text{B. } \frac{8}{7(x-5)} + \frac{1}{7(x+3)}$$

$$\text{C. } \frac{5}{8(x-5)} + \frac{1}{8(x+3)}$$

D. None of these

Answer:



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11. Resolve $\frac{3x^2 + 2x + 4}{(x - 1)(x^2 - 4)}$ into partial fractions.

A. $\frac{5}{x - 2} + \frac{1}{x - 1} + \frac{1}{x + 2}$

B. $\frac{5}{x - 2} + \frac{2}{x - 1} + \frac{1}{x + 2}$

C. $\frac{5}{x - 2} + \frac{2}{x - 1} - \frac{1}{x + 2}$

D. $\frac{5}{x - 2} - \frac{3}{(x - 1)} + \frac{1}{(x + 2)}$

Answer:



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12. Resolve $\frac{2x + 1}{x^2 - 2x - 8}$ into partial fractions.

A. $\frac{3}{2(x - 4)} - \frac{1}{2(x + 2)}$

B. $\frac{3}{2(x - 4)} + \frac{1}{2(x + 2)}$

C. $\frac{1}{2(x - 4)} - \frac{3}{2(x + 2)}$

D. None of these

Answer:



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13. Resolve $\frac{2x^2 + 3x + 18}{(x - 2)(x + 2)^2}$ into partial fractions.

A. $\frac{2}{(x + 2)} - \frac{5}{(x - 1)^2}$

B. $\frac{2}{x - 2} + \frac{1}{(x + 2)} + \frac{3}{(x + 2)^2}$

$$C. \frac{2}{x-2} - \frac{5}{(x+2)^2}$$

$$D. \frac{2}{x-2} - \frac{1}{(x+2)} + \frac{3}{(x+2)^2}$$

Answer:



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14. Resolve $\frac{x^2 - x + 1}{x^3 - 1}$ into partial fractions.

$$A. \frac{1}{3(x-1)} + \frac{2x-2}{3(x^2+x+1)}$$

$$B. \frac{1}{3(x-1)} - \frac{2x-2}{3(x^2+x+1)}$$

$$C. \frac{1}{2(x-1)} + \frac{x+2}{2(x^2+x+1)}$$

$$D. \frac{1}{3(x-1)} - \frac{x-2}{3(x^2+x+1)}$$

Answer:



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15. Resolve $\frac{x - 1}{x^3 - 3x^2 + 2x}$ into partial fractions.

A. $\frac{1}{(x - 2)} - \frac{1}{2x}$

B. $\frac{1}{2(x - 2)} - \frac{1}{2x}$

C. $\frac{1}{(x - 2)} + \frac{1}{x - 1} + \frac{1}{2x}$

D. $\frac{1}{(x - 2)} - \frac{1}{x - 1} + \frac{1}{2x}$

Answer:



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1. Resolve $\frac{x - b}{x^2 + (a + b)x + ab}$ into partial fractions.

A. $\frac{2a}{(a + b)(x + a)} - \frac{2b}{(a + b)(x + b)}$

B. $\frac{a + b}{(a - b)(x + a)} + \frac{2b}{(a - b)(x + b)}$

C. $\frac{a + b}{(a - b)(x + a)} - \frac{2b}{(a - b)(x + b)}$

D. None of these

Answer:



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2. Resolve $\frac{x + 1}{x^2 - 4}$ into partial fractions.

A. $\frac{3}{2(x - 2)} + \frac{1}{2(x + 2)}$

B. $\frac{3}{2(x - 2)} - \frac{1}{2(x + 2)}$

$$C. \frac{3}{4(x-2)} + \frac{1}{4(x+2)}$$

$$D. \frac{3}{4(x-2)} - \frac{1}{4(x+2)}$$

Answer:



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3. Resolve $\frac{x}{(x+1)(x-1)^2}$ into partial fractions.

$$A. \frac{1}{2(x-1)^2} + \frac{1}{4(x-1)} + \frac{1}{4(x+1)}$$

$$B. \frac{-1}{4(x+1)} + \frac{1}{4(x-1)} + \frac{1}{2(x-1)^2}$$

$$C. \frac{-1}{4(x-1)} + \frac{1}{4(x+1)} + \frac{1}{2(x-1)^2}$$

D. None of these

Answer:



4. Resolve $\frac{3x - 5}{x^2 + 3x + 2}$ into partial fractions.

A. $\frac{7}{x + 2} - \frac{5}{x + 1}$

B. $\frac{-8}{x + 2} - \frac{11}{(x + 1)}$

C. $\frac{11}{x + 2} - \frac{8}{x + 1}$

D. $\frac{7}{x + 2} + \frac{5}{x + 1}$

Answer:

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5. Resolve $\frac{3x + 5}{x^2 + 8x - 20}$ into partial fractions.

A. $\frac{11}{24(x - 2)} + \frac{25}{24(x + 10)}$

$$B. \frac{11}{6(x-2)} + \frac{25}{6(x+10)}$$

$$C. \frac{11}{12(x+2)} + \frac{25}{12(x-10)}$$

$$D. \frac{11}{12(x-2)} + \frac{25}{12(x+10)}$$

Answer:



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6. Resolve $\frac{ax + b^2}{x^2 - (a + b)^2}$ into partial fractions.

$$A. \frac{a^2 + ab + b^2}{2(a+b)(x - (a+b))} + \frac{a^2 + ab - b^2}{2(a+b)(x + (a+b))}$$

$$B. \frac{a^2 + b^2}{2(a+b)(x - (a+b))} + \frac{a^2 - b^2}{2(a+b)(x + (a+b))}$$

$$C. \frac{a^2 - b^2}{2(a+b)(x - (a-b))} + \frac{a^2 + b^2}{2(a+b)(x + (a+b))}$$

$$D. \frac{a^2 + ab + b^2}{2(a+b)(x - (a+b))} - \frac{a^2 + ab - b^2}{2(a+b)(x + (a+b))}$$

Answer:



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7. Find the constants a, b, c and d , respectively, if

$$\frac{1}{x^4 - x} = \frac{a}{x} + \frac{b}{x - 1} + \frac{cx + d}{x^2 + x + 1}.$$

A. $-1, \frac{1}{3}, \frac{-1}{2}, \frac{-5}{6}$

B. $-1, \frac{1}{3}, \frac{-1}{2}, \frac{5}{6}$

C. $1, \frac{1}{3}, \frac{1}{2}, \frac{5}{6}$

D. None of these

Answer:



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8. If $\frac{x^3}{(x-1)(x-2)} = Ax + B + \frac{C}{x-1} + \frac{D}{x-2}$, then A, B, C and D , respectively are _____.

A. 1, 3, 1, 8

B. 1, -1, 3, 8

C. 1, 3, -1, 8

D. -1, -3, 1, 8

Answer:



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9. Resolve $\frac{2x^2 + 3}{x^4 + 8x^2 + 15}$ into partial fractions.

A. $\frac{3}{2(x^2 + 3)} + \frac{5}{2(x^2 + 5)}$

$$\text{B. } \frac{3}{2(x^2 - 3)} + \frac{5}{2(x^2 + 5)}$$

$$\text{C. } \frac{-3}{2(x^2 + 3)} + \frac{7}{2(x^2 + 5)}$$

$$\text{D. } \frac{7}{2(x^2 + 3)} - \frac{3}{2(x^2 + 5)}$$

Answer:

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10. Resolve $\frac{3x + 1}{(x - 1)^2}$ into partial fractions.

$$\text{A. } \frac{4}{(x - 1)} - \frac{3}{(x - 1)^2}$$

$$\text{B. } \frac{3}{(x - 1)} - \frac{4}{(x - 1)^2}$$

$$\text{C. } \frac{3}{(x - 1)^2} - \frac{3}{(x - 1)^2}$$

$$\text{D. } \frac{3}{(x - 1)} + \frac{4}{(x - 1)^2}$$

Answer:



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11. If $\frac{3x^2 + 14x + 10}{x^2(x + 2)} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{x + 2}$, then A , B and C , respectively are _____.

A. $\frac{9}{2}, -5, \frac{3}{2}$

B. $\frac{9}{2}, 5, \frac{-3}{2}$

C. $\frac{9}{2}, \frac{3}{2}, -5$

D. $\frac{-9}{2}, \frac{-3}{2}, 5$

Answer:



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12. If $\frac{2x - 1}{(x + 1)(x^2 - 1)} = \frac{A}{x - 1} + \frac{B}{x + 1} + \frac{C}{(x + 1)^2}$, then

A, B, C , respectively are _____.

A. $\frac{1}{4}, \frac{-1}{4}, \frac{3}{2}$

B. $\frac{1}{4}, \frac{1}{4}, \frac{3}{2}$

C. $\frac{1}{4}, \frac{-5}{2}, \frac{5}{4}$

D. $\frac{1}{4}, \frac{5}{2}, \frac{5}{4}$

Answer:



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13. Resolve $\frac{ax - b}{(x + 1)^2}$ into partial fractions.

A. $\frac{a}{x + 1} + \frac{a + b}{(x + 1)^2}$

$$\text{B. } \frac{a}{x+1} + \frac{a-b}{(x+1)^2}$$

$$\text{C. } \frac{a}{x+1} - \frac{a-b}{(x+1)^2}$$

$$\text{D. } \frac{a}{x+1} - \frac{a+b}{(x+1)^2}$$

Answer:



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14. Resolve $\frac{4x^2 + 3x + 2}{(x-4)^3}$ into partial fractions.

$$\text{A. } \frac{25}{4(x-4)} + \frac{59}{2(x-4)} + \frac{78}{(x-4)^3}$$

$$\text{B. } \frac{25}{4(x-4)} - \frac{69}{2(x-4)^2} + \frac{78}{(x-4)^3}$$

$$\text{C. } \frac{35}{4(x-4)} + \frac{69}{2(x-4)^2} + \frac{78}{(x-4)^3}$$

$$\text{D. } \frac{4}{x-4} + \frac{35}{(x-4)^2} + \frac{78}{(x-4)^3}$$

Answer:



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15. Resolve $\frac{1}{x^2 - 7x - 18}$ into partial fractions.

A. $\frac{1}{11} \left(\frac{1}{x - 9} - \frac{1}{x + 2} \right)$

B. $\frac{1}{11} \left(\frac{1}{x - 9} + \frac{1}{x + 2} \right)$

C. $\frac{1}{11} \left(\frac{1}{x + 9} - \frac{1}{x - 2} \right)$

D. $\frac{1}{11} \left(\frac{1}{x + 9} + \frac{1}{x + 2} \right)$

Answer:



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16. Resolve $\frac{10}{x^2 - 25}$ into partial fractions.

A. $\frac{1}{x - 5} - \frac{1}{x + 5}$

B. $\frac{1}{x - 5} + \frac{2}{x + 5}$

C. $\frac{1}{x + 5} + \frac{1}{x - 5}$

D. $\frac{1}{x - 5} - \frac{2}{x + 5}$

Answer:

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17. Resolve $\frac{2x}{3(x - 1)(x - 3)}$ into partial fractions.

A. $\frac{1}{x + 3} - \frac{1}{3(x + 1)}$

B. $\frac{1}{x - 3} - \frac{1}{x + 1}$

$$\text{C. } \frac{1}{x-3} - \frac{1}{3(x+1)}$$

$$\text{D. } \frac{1}{x-3} - \frac{2}{3(x-1)}$$

Answer:



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18. If $\frac{x}{(x+2)(x+3)} = \frac{A}{x+3} + \frac{B}{x+2}$, then $A - B$ is =
_____.

A. 4

B. 5

C. -6

D. 2

Answer:



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19. Resolve $\frac{5}{(x+2)(x+3)}$ into partial fractions.

A. $5\left(\frac{1}{x+2} + \frac{1}{x+3}\right)$

B. $5\left(\frac{1}{x+2} - \frac{1}{x+3}\right)$

C. $10\left(\frac{1}{x+2} - \frac{1}{x+3}\right)$

D. $10\left(\frac{1}{x+2} + \frac{1}{x+3}\right)$

Answer:



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20. Resolve $\frac{1}{x^2 - 7x + 12}$ into partial fractions.

$$\text{A. } \frac{1}{x-4} - \frac{1}{x-3}$$

$$\text{B. } \frac{1}{x-3} + \frac{1}{x-4}$$

$$\text{C. } \frac{2}{x-4} - \frac{1}{x-3}$$

$$\text{D. } \frac{1}{x+3} - \frac{1}{x+4}$$

Answer:

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Level 3

1. Resolve $\frac{1}{x^4 - 3x^2 - 4}$ into partial fractions.

$$\text{A. } \frac{1}{5(x^2 - 4)} + \frac{1}{5(x^2 + 1)}$$

$$\text{B. } \frac{1}{5(x^2 - 4)} - \frac{1}{5(x^2 + 1)}$$

$$C. \frac{1}{4(x^2 + 4)} - \frac{1}{4(x^2 + 1)}$$

$$D. \frac{1}{4(x^2 + 4)} + \frac{1}{4(x^2 + 1)}$$

Answer:

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2. Resolve $\frac{4x + 3}{x^3 - 7x - 6}$ into partial fractions.

$$A. \frac{1}{4(x + 1)} + \frac{3}{4(x - 3)} - \frac{1}{(x + 2)}$$

$$B. \frac{-1}{4(x + 1)} + \frac{3}{4(x - 3)} + \frac{1}{(x + 2)}$$

$$C. \frac{1}{4(x + 1)} - \frac{3}{4(x - 3)} + \frac{1}{(x + 2)}$$

$$D. \frac{1}{4(x + 1)} - \frac{3}{4(x - 3)} \pm \frac{1}{x + 2}$$

Answer:

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3. If $\frac{1}{(a^2 - bx)(b^2 - ax)} = \frac{A}{a^2 - bx} + \frac{B}{b^2 - bx}$, then the value of A and B respectively would be _____.

A. $\frac{b}{b^3 - a^3}, \frac{a}{b^3 - a^3}$

B. $\frac{b}{b^3 - a^3}, \frac{a}{a^3 - a^3}$

C. $\frac{b}{a^3 - b^3}, \frac{a}{a^3 - a^3}$

D. $\frac{-b}{b^3 - a^3}, \frac{-a}{a^3 - a^3}$

Answer:



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4. Resolve $\frac{3x - 5}{(x - 1)^4}$ into partial fractions.

$$\text{A. } \frac{1}{(x-1)} + \frac{2}{(x-1)^2} - \frac{3}{(x-1)^3} + \frac{4}{(x-1)^4}$$

$$\text{B. } \frac{3}{(x-1)^2} + \frac{2}{(x-1)^3} - \frac{1}{(x-1)^4}$$

$$\text{C. } \frac{3}{(x-1)^3} + \frac{2}{(x-1)^4}$$

$$\text{D. } \frac{3}{(x-1)^3} - \frac{2}{(x-1)^4}$$

Answer:



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5. Resolve $\frac{x^2 + x + 1}{x^3 + 1}$ into partial fractions.

$$\text{A. } \frac{1}{3(x+1)} + \frac{x+1}{3(x^2-x+1)}$$

$$\text{B. } \frac{-1}{3(x+1)} + \frac{2x+2}{3(x^2-x+1)}$$

$$\text{C. } \frac{1}{3(x+1)} + \frac{2x+2}{3(x^2-x+1)}$$

D. None of these

Answer:



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6. Resolve $\frac{2x^2 + 8x + 13}{(x + 1)^4}$ into partial fractions.

A. $\frac{2}{(x + 1)^2} + \frac{5}{(x + 1)^3} + \frac{7}{(x + 1)^4}$

B. $\frac{1}{(x + 1)^2} + \frac{5}{(x + 1)^3} + \frac{7}{(x + 1)^4}$

C. $\frac{2}{(x + 2)^2} + \frac{4}{(x + 1)^3} + \frac{7}{(x + 1)^4}$

D. $\frac{4}{(x + 1)^2} + \frac{5}{(x + 1)^3} + \frac{7}{(x + 1)^4}$

Answer:



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7. Resolve $\frac{6x^2 - 14x + 6}{x(x - 1)(x - 2)}$ into partial fractions.

A. $\frac{2}{x} + \frac{3}{x - 1} + \frac{1}{x - 2}$

B. $\frac{3}{x} + \frac{2}{x - 1} + \frac{1}{x - 2}$

C. $\frac{1}{x} + \frac{2}{x - 1} + \frac{3}{x - 2}$

D. $\frac{1}{x} + \frac{3}{x - 1} + \frac{2}{x - 2}$

Answer:

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8. Resolve $\frac{1}{(x - 4)(x^2 + 3)}$ into partial fractions.

A. $\frac{1}{19} \left[\frac{1}{x - 4} + \frac{x + 4}{x^2 + 3} \right]$

B. $\frac{1}{19} \left[\frac{1}{x - 4} + \frac{x + 3}{x^2 + 3} \right]$

$$C. \frac{1}{19} \left[\frac{1}{x-4} + \frac{x+3}{x^2+3} \right]$$

$$D. \frac{1}{19} \left[\frac{1}{x-4} - \frac{x+4}{x^2+3} \right]$$

Answer:



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9. Resolve $\frac{3x^2 + 7}{x^4 - 3x^2 + 2}$ into partial fractions.

$$A. \frac{10}{x^2 - 2} + \frac{5}{x - 1} - \frac{5}{x + 1}$$

$$B. \frac{13}{x^2 - 2} + \frac{5}{x + 1} - \frac{5}{x - 1}$$

$$C. \frac{5}{x^2 - 2} + \frac{10}{x - 1} - \frac{10}{x + 1}$$

$$D. \frac{5}{x - 1} - \frac{5}{x + 1} - \frac{13}{x^2 - 2}$$

Answer:



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10. If $\frac{4x^2 + 5x + 6}{x^2(x + 3)} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{x + 3}$, then
 $2A + 3B + 4C =$ _____.

A. 10

B. 20

C. 30

D. 40

Answer:



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