

COLLEGE ALGEBRA QUIZ

- (1) Decompose the following rational expression into partial fractions.

$$\frac{-11x - 3}{30x^2 - 11x + 1}$$

Solution: $\frac{4}{5x-1} - \frac{7}{6x-1}$

- (2) Decompose the following rational expression into partial fractions.

$$\frac{2x^2 + 20x + 42}{(x + 3)^3(x - 1)}$$

Solution: $\frac{-2}{(x+3)^2} - \frac{1}{x+3} + \frac{1}{x-1}$

- (3) Decompose the following rational expression into partial fractions.

$$\frac{6x^3 + 7x^2 + 9x}{3x^2 + 2x - 1}$$

Solution: $2x + 1 + \frac{3}{3x-1} + \frac{2}{x+1}$

- (4) Decompose the following rational expression into partial fractions.

$$\frac{24 + 15x - x^2}{(2x - 1)(x + 2)^2}$$

Solution: $\frac{5}{2x-1} - \frac{3}{x+2} + \frac{2}{(x+2)^2}$

- (5) Decompose the following rational expression into partial fractions.

$$\frac{-2x^2 - 2x - 13}{(x^2 + 1)(x - 2)}$$

Solution: $\frac{3x+4}{x^2+1} - \frac{5}{x-2}$