

Write the partial fraction decomposition of each rational expression

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

2. $f(x) = \frac{x^2 + 9x + 2}{(x-1)^2(x+3)}$

3. $f(x) = \frac{7x^3 - 2x^2 - 3x + 6}{x^2 - 4}$

4. $f(x) = \frac{1}{x^2 + 4x + 3}$

5. $F(s) = \frac{7s^3 - 2s^2 - 3s + 6}{s^3(s-2)}$

6. $F(s) = \frac{s+7}{s^2 - 3s - 10}$

7. $F(s) = \frac{s+5}{s^2 - 3s + 2}$

8. $f(x) = \frac{2x^3 - 4x^2 - x - 3}{x^2 - 2x - 3}$