

$$\frac{x+8}{x^2-4x-5} + \frac{4x+1}{x^2+2x-35}$$

$$\frac{x+8}{(x-5)(x+1)} + \frac{4x+1}{(x-5)(x+7)}$$

$$= \frac{(x+8)(x+7) + (4x+1)(x+1)}{(x-5)(x+1)(x+7)}$$

$$= \frac{x^2 + 8x + 7x + 56 + 4x^2 + x + 4x + 1}{(x-5)(x+1)(x+7)}$$

$$= \frac{5x^2 + 20x + 57}{(x-5)(x+1)(x+7)}$$