

$$\frac{f(x)}{g(x)} = \frac{x^2 + 2x - 8}{2x^2 + 14x - 36} = \frac{(x-2)(x+4)}{2(x-2)(x+9)} = \frac{x+4}{2(x+9)} = \frac{x+4}{2x+18}$$