

$$b. P(x) \equiv A(x) \quad (\text{Given})$$

Then, compare corresponding coefficients:

$$\begin{aligned} \text{coefficients of } x^2: \quad 2m-1 &= 3 \\ 2m &= 4 \\ \therefore \boxed{m=2} \end{aligned}$$

$$\begin{aligned} \text{coefficients of } x: \quad 3n-2 &= -26 \\ 3n &= -24 \\ \therefore \boxed{n=-8} \end{aligned}$$

$$\text{constants: } 35 = 35.$$

$$3) a. F(x) = \frac{P(x)}{Q(x)}$$

The conditions for which $F(x)$ exist is that

$$\begin{aligned} Q(x) &\neq 0 \\ (x-7)(3x+1) &\neq 0 \end{aligned}$$

$$\begin{aligned} x-7 &\neq 0 \quad \& \quad 3x+1 \neq 0 \\ x &\neq 7 \quad \& \quad x \neq -\frac{1}{3} \end{aligned}$$

Hence, $F(x)$ is defined for all integers except $x=7$

Since, 7 is an integer at which the denominator of $F(x)$ vanishes (or undefined).

$$b. F(x) = \frac{(x-7)(3x-5)}{(x-7)(3x+1)} = \frac{3x-5}{3x+1}$$

$$\frac{3x-5}{3x+1} = -1 \quad \text{then, } 3x-5 = -3x-1$$

$$\text{So } 6x = 4$$

$$\therefore \boxed{x = \frac{2}{3}}$$