① $3m+2 \overline{)3m^2+2m-1}$

m

$-3m^2+2m$ ↓

$0\ -1$

$$m + \frac{1}{3m+2}$$

② $-5 \mid 8 \quad 61 \quad 67 \quad 102$

$\downarrow \quad -40 \quad -105 \quad 190$

$8 \quad 21 \quad -38 \quad \boxed{292}$

$$8r^2+21r-38+\frac{292}{r+5}$$

③ $x^2-5x-4 \overline{)5x^4-6x^3+2x^2-7x+10}$

$5x^2+19x+117$

$-5x^4+25x^3+20x^2$ ↓

$19x^3+22x^2-7x$

$-19x^3+95x^2+76x$ ↓

$117x^2+69x+10$

$-117x^2+585x+468$

$654x+478$

$$5x^2+19x+117+\frac{654x+478}{x^2-5x-4}$$

④ $8 \mid 3 \quad -8 \quad 0 \quad -92$

$\downarrow \quad 24 \quad 128 \quad 1024$

$3 \quad 16 \quad 128 \quad \boxed{932}$

$$3p^2+16p+128+\frac{932}{p-8}$$

⑤ $8 \mid 1 \quad -15 \quad 50 \quad 56 \quad -61 \quad -30$

$\downarrow \quad 8 \quad -56 \quad -48 \quad 64 \quad 24$

$1 \quad -7 \quad -6 \quad 8 \quad 3 \quad \boxed{-6}$

$$a^4-7a^3-6a^2+8a+3+\frac{-6}{a-8}$$

⑥ $7x-4 \overline{)14x^2-8x-2}$

$2x$

$-14x^2+8x$ ↓

$0\ -2$

$$2x+\frac{-2}{7x-4}$$

⑦ $-2 \mid 3 \quad -1 \quad 5 \quad 3$

$\downarrow \quad -6 \quad 14 \quad -38$

$3 \quad -7 \quad 19 \quad \boxed{-35}$

$$3x^2-7x+19+\frac{-35}{x+2}$$

⑧ $2x^2-4x+2$) $6x^5+0x^4-4x^3+2x^2+x+2$ $\quad 3x^3+6x^2+7x+9$

$-6x^5+12x^4-6x^3$

$12x^4-10x^3+2x^2$

$-12x^4+24x^3-12x^2$

$14x^3-10x^2+x$

$-14x^3+28x^2-14x$

$18x^2-13x+2$

$-18x^2+36x-18$

$23x-16$

$$3x^3+6x^2+7x+9+\frac{23x-16}{2x^2-4x+2}$$

⑨ $\frac{a(x)}{b(x)}=\frac{x^3+2x^2+3x+2}{x+4}$

$q(x)+\frac{r(x)}{b(x)}=x^2-2x+11+\frac{-42}{x+4}$

⑩ $\frac{a(x)}{b(x)}=\frac{x^4-6x^3+4x^2+22x-13}{x-3}$

$q(x)+\frac{r(x)}{b(x)}=x^3-3x^2-x+7+\frac{8}{x-3}$