

$$\begin{array}{r}
 1. \quad \begin{array}{r} 8x^2 + 9x - 4 \\ x+2 \overline{) 8x^3 + 25x^2 + 14x - 6} \\ \underline{8x^3 + 16x^2} \\ 9x^2 + 14x - 6 \\ \underline{9x^2 + 18x} \\ -4x - 6 \\ \underline{-4x - 8} \\ 2 \end{array}
 \end{array}$$

$$= 8x^2 + 9x - 4 + \frac{2}{x+2}$$

$$\begin{array}{r}
 2. \quad \begin{array}{r} 3r^2 + 2r - 4 \\ r-3 \overline{) 3r^3 - 7r^2 - 10r + 17} \\ \underline{3r^3 - 9r^2} \\ 2r^2 - 10r + 17 \\ \underline{2r^2 - 6r} \\ +4r + 17 \\ \underline{-4r + 12} \\ +5 \end{array}
 \end{array}$$

$$= 3r^2 + 2r - 4 + \frac{5}{r-3}$$

$$\begin{array}{r}
 3. \quad \begin{array}{r} x^2 - 4x + 6 \\ x+7 \overline{) x^3 + 3x^2 - 22x + 40} \\ \underline{x^3 + 7x^2} \\ -4x^2 - 22x + 40 \\ \underline{-4x^2 - 28x} \\ 6x + 40 \\ \underline{-6x + 42} \\ -2 \end{array}
 \end{array}$$

$$= x^2 - 4x + 6 - \frac{2}{x+7}$$

$$\begin{array}{r}
 4. \quad \begin{array}{r} 3n - 5 \\ n+1 \overline{) 3n^2 - 2n + 13} \\ \underline{3n^2 + 3n} \\ -5n + 13 \\ \underline{-5n - 5} \\ -8 \end{array}
 \end{array}$$

$$= 3n - 5 - \frac{8}{n+1}$$

$$\begin{array}{r}
 5. \quad \begin{array}{r} 10K - 4 \\ K+7 \overline{) 10K^2 + 66K - 25} \\ \underline{10K^2 + 70K} \\ -4K - 25 \\ \underline{-4K - 28} \\ 3 \end{array}
 \end{array}$$

$$= 10K - 4 + \frac{3}{K+7}$$

$$\begin{array}{r}
 6. \quad \begin{array}{r} 7n + 7 \\ n+10 \overline{) 7n^2 + 77n + 72} \\ \underline{7n^2 + 70n} \\ 7n + 72 \\ \underline{7n + 70} \\ 2 \end{array}
 \end{array}$$

$$= 7n + 7 + \frac{2}{n+10}$$

$$\begin{array}{r}
 7. \quad b+9 \overline{) b^2 + 6b + 8} \\
 \underline{b^3 + 15b^2 + 62b + 78} \\
 \underline{b^3 + 9b^2} \\
 6b^2 + 62b + 78 \\
 \underline{6b^2 + 54b} \\
 8b + 78 \\
 \underline{8b + 72} \\
 6
 \end{array}$$

$$= b^2 + 6b + 8 + \frac{6}{b+9}$$

$$\begin{array}{r}
 8. \quad x+6 \overline{) 6x^2 + 33x - 8} \\
 \underline{6x^2 + 36x} \\
 -3x - 8 \\
 \underline{-3x - 18} \\
 10
 \end{array}$$

$$= 6x - 3 + \frac{10}{x+6}$$

$$\begin{array}{r}
 9. \quad p+4 \overline{) 7p^3 + 23p^2 - 23p - 9} \\
 \underline{7p^3 + 28p^2} \\
 -5p^2 - 23p - 9 \\
 \underline{-5p^2 - 20p} \\
 -3p - 9 \\
 \underline{-3p - 12} \\
 3
 \end{array}$$

$$= 7p^2 - 5p - 3 + \frac{3}{p+4}$$

$$\begin{array}{r}
 10. \quad m+8 \overline{) m^3 + 10m^2 + 14m - 11} \\
 \underline{m^3 + 8m^2} \\
 2m^2 + 14m - 11 \\
 \underline{2m^2 + 16m} \\
 -2m - 11 \\
 \underline{-2m - 16} \\
 5
 \end{array}$$

$$= m^2 + 2m - 2 + \frac{5}{m+8}$$

$$\begin{array}{r}
 11. \quad r-8 \overline{) 10r^2 - 90r + 74} \\
 \underline{10r^2 - 80r} \\
 -10r + 74 \\
 \underline{-10r + 80} \\
 -6
 \end{array}$$

$$= 10r - 10 - \frac{6}{r-8}$$

$$\begin{array}{r}
 12. \quad r+4 \overline{) 3r^2 + 16r + 6} \\
 \underline{3r^2 + 12r} \\
 4r + 6 \\
 \underline{4r + 16} \\
 -10
 \end{array}$$

$$= 3r + 4 - \frac{10}{r+4}$$

$$\begin{array}{r}
 13. \quad x+6 \quad \overline{7x+3} \\
 \underline{7x^2+45x+20} \\
 7x^2+42x \\
 \underline{3x+20} \\
 3x+18 \\
 \underline{2}
 \end{array}
 = 7x+3 + \frac{2}{x+6}$$

$$\begin{array}{r}
 14. \quad r-1 \quad \overline{r^2-2-1} \\
 \underline{r^3-3r^2+r+8} \\
 r^3-r^2 \\
 \underline{-2r^2+r+8} \\
 -2r^2+2 \\
 \underline{-r+8} \\
 -r+1 \\
 \underline{7}
 \end{array}
 = r^2-2-1 + \frac{7}{r-1}$$

$$\begin{array}{r}
 15. \quad x-2 \quad \overline{x^2-5x-9} \\
 \underline{x^3-7x^2+x+27} \\
 x^3-2x^2 \\
 \underline{-5x^2+x+27} \\
 -5x^2+10x \\
 \underline{-9x+27} \\
 -9x+18 \\
 \underline{9}
 \end{array}
 = x^2-5x-9 + \frac{9}{x-2}$$