

Divide  $f(x)$  by  $d(x)$  by using long division, and write a summary statement in polynomial form and fraction form.

$$f(x) = x^3 + 10x^2 + 13x + 36 \quad d(x) = x + 9$$

$$\begin{array}{r} x^2 + x + 4 \\ x + 9 \overline{) x^3 + 10x^2 + 13x + 36} \\ \underline{- x^3 + 9x^2} \phantom{+ 36} \\ x^2 + 13x \phantom{+ 36} \\ \underline{- x^2 + 9x} \phantom{+ 36} \\ 4x + 36 \\ \underline{- 4x + 36} \\ 0 \end{array}$$

$$x^2 + x + 4$$

Divide  $f(x)$  by  $d(x)$  by using long division, and write a summary statement in polynomial form and fraction form.

$$f(x) = 3x^2 + 18x - 46 \quad d(x) = 3x + 6$$

Divide  $f(x)$  by  $d(x)$  by using long division, and write a summary statement in polynomial form and fraction form.

$$f(x) = 15x^3 + 37x^2 + 53x + 55 \quad d(x) = 3x + 5$$

Divide  $f(x)$  by  $d(x)$  by using long division, and write a summary statement in polynomial form and fraction form.

$$f(x) = 4x^3 - 3x^2 + x + 1 \quad d(x) = x^2 + x + 1$$

$$\begin{array}{r}
 4x-7 \\
 \hline
 x^2+x+1 \overline{) 4x^3-3x^2+x+1} \\
 \underline{(\Rightarrow) 4x^3+4x^2+4x} \phantom{+1} \\
 -7x^2-3x+1 \\
 \underline{(-) -7x^2-7x-7} \\
 4x+8
 \end{array}$$

$$4x+7 + \frac{4x+8}{x^2+x+1}$$

Divide  $f(x)$  by  $d(x)$  by using long division, and write a summary statement in polynomial form and fraction form.

$$f(x) = -3x^4 - 2x - 1 \quad d(x) = x - 1$$

Divide  $f(x)$  by  $d(x)$  by using synthetic division, and write a summary statement in polynomial form and fraction form.

$$f(x) = x^3 + 13x^2 + 42x + 54 \quad d(x) = x + 9$$

$$\begin{array}{r|rrrr} -9 & 1 & 13 & 42 & 54 \\ & & -9 & -36 & -54 \\ \hline & 1 & 4 & 6 & 0 \end{array}$$

$$x^2 + 4x + 6$$

Divide  $f(x)$  by  $d(x)$  by using synthetic division, and write a summary statement in polynomial form and fraction form.

$$f(x) = 2x^3 + 3x^2 - 2x - 3 \quad d(x) = 2x + 3$$

$$\begin{array}{r|rrrr} -\frac{3}{2} & 2 & 3 & -2 & -3 \\ & & -3 & 0 & 3 \\ \hline & 2 & 0 & -2 & 0 \end{array}$$

$$\frac{2x^2 - 2}{2} \\ x^2 - 1$$

Divide  $f(x)$  by  $d(x)$  by using synthetic division, and write a summary statement in polynomial form and fraction form.

$$f(x) = 2x^3 - 2x^2 + 7x \quad d(x) = 2x - 2$$



Divide  $f(x)$  by  $d(x)$  by using synthetic division, and write a summary statement in polynomial form and fraction form.

$$f(x) = 3x^2 - 14 \quad d(x) = x - 2$$

$$\begin{array}{r|rrr} 2 & 3 & 0 & -14 \\ & & 6 & 12 \\ \hline & 3 & 6 & -2 \end{array}$$

$$3x + 6 - \frac{2}{x-2}$$

$$X^4 - 17 \div X + 2$$

$$\begin{array}{r|rrrrr} -2 & 1 & 0 & 0 & 0 & -17 \\ & & -2 & 4 & -8 & 16 \\ \hline & 1 & -2 & 4 & -8 & -1 \end{array}$$

$$X^3 - 2x^2 + 4x - 8 - \frac{1}{X+2}$$