- Let $f(x) = 2x^2 + 3x + 1$. Use division to compute $f(2)$.

To compute $f(a)$, we find the remainder when $f(x)$ is divided by $x-2$ →

$$
\begin{array}{r}
2x+7 \\
x-2 \overline{)\,2x^2+3x+1} \\
-(2x^2-4x) \\
\hline
7x+1 \\
-(7x-14) \\
\hline
15
\end{array}
$$

$f(a) = 15$

- Let $g(x) = x^3 - 5x + 7$. Use division to compute $g(-3)$.

$g(-3)$ = remainder when $g(x)$ is divided by $x+3$ →

$$
\begin{array}{r}
x^2-3x+4 \\
x+3 \overline{)\,x^3+0x^2-5x+7} \\
-(x^3+3x^2) \\
\hline
-3x^2-5x \\
-(-3x^2-9x) \\
\hline
4x+7 \\
-(4x+12) \\
\hline
-5
\end{array}
$$

$g(-3) = -5$