

# Notes 7.10

1)  $(c^2 - c - 1) \div c$

$$\begin{array}{r}
 \boxed{c - 1 - \frac{1}{c}} \\
 c \sqrt{c^2 - c - 1} \\
 \underline{+c^2 + c} \\
 -1
 \end{array}$$

2)  $(x^4 - 4x^3 - 8x^2) \div x^2$

$$\begin{array}{r}
 \boxed{x^2 - 4x - 8} \\
 x^2 \sqrt{x^4 - 4x^3 - 8x^2} \\
 \underline{+x^4 + 4x^3 + 8x^2} \\
 0
 \end{array}$$

$$x^4 \div x^2 = x^2$$

you subtract the powers

$$x^{4-2} = x^2$$

then divide

$$-4x^3 \text{ by } x^2$$

$$-4x^{3-2}$$

$$-4x^1$$

then divide

$$-8x^2 \text{ by } x^2$$

$$-8x^{2-2} = -8x^0$$

$$-8$$

$$3) (2m^2 - 5m + 2) \div 2m$$

$$2m \overline{) \begin{array}{r} m - \frac{5}{2} + \frac{1}{m} \\ 2m^2 - 5m + 2 \\ \underline{- 2m^2 - 5m} \phantom{+ 2} \\ \phantom{2m^2 - 5m} + 2 \end{array}}$$

the  $\frac{2}{2m} = \frac{1}{m}$

divide  $2m^2$  by  $2m$

$$2m^{2-1}$$

$$m^1$$

then divide

$-5m$  by  $2m$

$$\frac{-5m}{2m} = -\frac{5}{2}$$

$$4) (x^2 - 3x + 2) \div (x - 2)$$

multiply multiply

$$x - 2 \overline{) \begin{array}{r} x^2 - 3x + 2 \\ \underline{-(x^2 - 2x)} \\ -x + 2 \\ \underline{-(-x + 2)} \\ 0 \end{array}}$$

change signs

$$\boxed{x - 1}$$

$$5) (p^2 + 3p + 2) \div (p + 1)$$

multiply

$$p + 1 \overline{) \begin{array}{r} p^2 + 3p + 2 \\ \underline{-(p^2 + p)} \\ 2p + 2 \\ \underline{-(2p + 2)} \\ 0 \end{array}}$$

$$\boxed{p + 2}$$

Notes 7.10

$$6) (6x^2 + x - 1) \div (3x - 1)$$

$$\begin{array}{r} \boxed{2x+1} \\ 3x-1 \overline{) 6x^2 + x - 1} \\ \underline{6x^2 - 2x} \phantom{- 1} \\ 3x - 1 \\ \underline{3x - 1} \\ 0 \end{array}$$

$$7) (20x^2 - 2x - 4) \div (2x + 1)$$

$$\begin{array}{r} \boxed{10x+4} \\ 2x+1 \overline{) 20x^2 - 2x - 4} \\ \underline{+ 20x^2 + 10x} \phantom{- 4} \\ 0 \quad 8x - 4 \\ \underline{8x - 4} \\ 0 \end{array}$$

$$8) (2t^2 - 8t + 6) \div (t - 3)$$

$$\begin{array}{r} \boxed{2t-2} \\ t-3 \overline{) 2t^2 - 8t + 6} \\ \underline{+ 2t^2 - 6t} \phantom{+ 6} \\ -2t + 6 \\ \underline{-2t + 6} \\ 0 \end{array}$$