1 1

1.1 1

Requirement: Create the parameter notation of the line with the points $A(-2|5)$ and $B(3|-1)$.

Exercise: General Form: $\vec{OX} = \vec{OP} + \lambda * \vec{r}$

$$\vec{AB} = 1\vec{B} - \vec{A} \tag{1}$$

$$\vec{AB} = \begin{pmatrix} 5 \\ -6 \end{pmatrix} \tag{2}$$

$$\vec{OX} = \begin{pmatrix} 3 \\ -1 \end{pmatrix} + \lambda * \begin{pmatrix} -2.5 \\ 3 \end{pmatrix} \tag{3}$$

1.2 2

Requirements: Calculate the normal form of $\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 \\ -1 \end{pmatrix} + \lambda * \begin{pmatrix} -2.5 \\ 3 \end{pmatrix}$

Exercise:

$$k = \frac{-6}{5} \tag{4}$$

$$y = \frac{-6}{5} * x + d \tag{5}$$

$$-1 = \frac{-18}{5} * 3 + d \tag{6}$$

$$d = \frac{13}{5} \tag{7}$$

1.3 3

Requirement: $h(x) = 3x - 4$ should be converted to the parameter notation.

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 0 \\ -4 \end{pmatrix} + s * \begin{pmatrix} 1 \\ k \end{pmatrix} \tag{8}$$