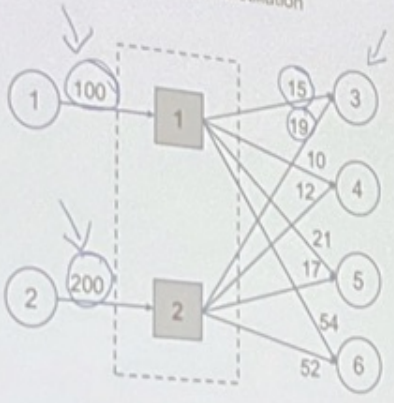
# Kapitel 1.2 Input-side determined production

- Distinct relationship between basic activities and input types (1:1)
- Only one input coefficient per activity unequal to zero
- **Example:** Petroleum distillation




Algebraic model:

$$y_3 = 0.15 \cdot x_1 + 0.095 \cdot x_2$$
$$y_4 = 0.10 \cdot x_1 + 0.06 \cdot x_2$$
$$y_5 = 0.21 \cdot x_1 + 0.085 \cdot x_2$$
$$y_6 = 0.54 \cdot x_1 + 0.26 \cdot x_2$$

# Cyclic technologies
## Algebraic model in x/y notation

$x_1$ egal Vorzeichen - alles Input

$$
\begin{aligned}
x_1 &= 2\cdot\lambda_1 + 4\cdot\lambda_2 + 5\cdot\lambda_3 \\
z_2 &= -6\cdot\lambda_1 - 5\cdot\lambda_2 - 3\cdot\lambda_3 + 0.2\cdot\lambda_4 \\
y_3 &= \lambda_1 + \lambda_2 + \lambda_3 \\
z_4 &= 7\cdot\lambda_1 + 8\cdot\lambda_2 + 7\cdot\lambda_3 - \lambda_4 \\
y_5 &= 0.8\cdot\lambda_4
\end{aligned}
$$