7.1d

$$
\begin{aligned}
t_1 &:= a + b \\
t_2 &:= -t_1 \\
t_3 &:= c + d \\
t_4 &:= t_2 * t_3 \\
t_5 &:= t_1 + c \\
t_7 &:= t_4 + t_5
\end{aligned}
$$

7.2c

```
L0: if i <= 10 goto L1
    goto L2
L1: t = i * 4
    a[t]:=0
L2:
```

7.5

$P \rightarrow \ \{D.offset_1 = 0;\}\ D\ \{P.offset = D.offset_2\}; S$
$D \rightarrow \ \{D_1.offset_1 = D.offset_1;\}\ D_1;\ \{D_2.offset_1 = D_1.offset_2;\}\ D_2\ \ \{D.offset_2 = D_2.offset_2;\}$
$D \rightarrow id : T\ \{enter(id.lexeme, T.type, D.offset_1);\ D.offset_2 = D.offset_1 + T.width;\}$
$T \rightarrow integer\ \{T.type = integer;\ T.width = 4;\}$
$T \rightarrow real\ \{T.type = real;\ T.width = 8;\}$
$T \rightarrow array[num]\ of\ T_1\ \{T.type = array(num.val, T_1.type);\ T.width = num.val \times T_1.width\}$
$T \rightarrow\ \ \uparrow T_1\ \{T.type = pointer(T_1.type);\ T.width = 4;\}$