



Ex 9

$$0 \cdot 0 = \{00\}$$

$$\{00\}^* = \{\epsilon, 00, 0000, 000000, \dots\}$$

$$1 \cdot 1 = \{11\}^* = \{\epsilon, 11, 1111, 111111, \dots\} \quad 0 \cdot 1 = \{1, 111, 11111, \dots\}$$

$$\begin{aligned} \{ \epsilon, 00, 0000, \dots \} \cup \{ 1, 111, 11111, \dots \} &= \{ \epsilon, 00, 11, 0011, 000011, 11110000, \dots \} \\ &= \{ \epsilon, 1, 00, 11, \dots \} \end{aligned}$$

$$\{ 1, 111, 11111, \dots \} \cup \{ \epsilon, 00, 0000, \dots \}$$

$$((0 \cdot 0)^* \cup ((1 \cdot 0 \cdot 1)^* \cup 1)) \cup (((1 \cdot 0 \cdot 1)^* \cup 1) \cdot (0 \cdot 0)^*)$$