40-414 Compiler Design

Lexical Analysis

Lecture 2

Exercise

Question?

For the code fragment below,
choose the correct number of tokens in each
class that appear in the code fragment

```
x = 0;\n\twhile(x > 10){\n\tx++;\n}
```

○ W = 9; K = 1; I = 3; N = 2; O = 9

○ W = 11; K = 4; I = 0; N = 2; O = 9

○ W = 9; K = 4; I = 0; N = 3; O = 9

○ W = 11; K = 1; I = 3; N = 3; O = 9

W: Whitespace
K: Keyword
I: Identifier
N: Number
O: Other Tokens:
{ } ( ) < ++ ; =

Answer!

For the code fragment below,
choose the correct number of tokens in each
class that appear in the code fragment

```
x = 0;\n\twhile(x > 10){\n\tx++;\n}
IWOWNO  W W   K   OIWOWNOO W W I OOW O
```

○ **W = 9; K = 1; I = 3; N = 2; O = 9**

○ W = 11; K = 4; I = 0; N = 2; O = 9

○ W = 9; K = 4; I = 0; N = 3; O = 9

○ W = 11; K = 1; I = 3; N = 3; O = 9

W: Whitespace
K: Keyword
I: Identifier
N: Number
O: Other Tokens:
    { } ( ) < ++ ; =

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Question?

How many distinct strings are in the language of the following regular expression:

$$(0 + 1 + \varepsilon)(0 + 1 + \varepsilon)(0 + 1 + \varepsilon)(0 + 1 + \varepsilon)$$

○ 31

○ 64

○ 32

○ 81

Answer!

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$$(0 + 1 + \varepsilon)(0 + 1 + \varepsilon)(0 + 1 + \varepsilon)(0 + 1 + \varepsilon)$$

- ○ **31**
- ○ 64
- ○ 32
- ○ 81

Question?

The language of the regular expression (abab)* is equivalent to the language of which of the following regular expressions?

Choose all that apply

○ (ab)*

○ (aba (baba)* b) + ε

○ (ab (abab)* ab) + ε

○ (a (ba)* b) + ε

Answer!

The language of the regular expression (abab)* is equivalent to the language of which of the following regular expressions?

Choose all that apply

- ○ (ab)*

- ○ (aba (baba)* b) + ε
- ○ (ab (abab)* ab) + ε

- ○ (a (ba)* b) + ε