

1. Regular Expressions

1. The set of all alphabetic strings.

Answer: $([a-zA-Z]^+)$

2. The set of all alphabetic words

Answer: $\backslash b([^\d W]^+)\backslash b$

3. The set of all lower case alphabetic strings ending in a b

Answer: $([a-z]^*b)$

4. The set of all lower case alphabetic words ending in a b

Answer: $\backslash b([a-z]^*b)\backslash b$

5. The set of all strings from the alphabet {"a", "b"} such that each "a" is immediately preceded by and immediately followed by at least one "b"

Answer: $(b+a\{0,1\}b+|b)$

6. The set of all words from the alphabet {"a", "b"} such that each "a" is immediately preceded by and immediately followed by at least one "b"

Answer: $\backslash b(b+a\{0,1\}b+)\backslash b$

7. the set of all strings from the alphabet {"a", "b"} that form the pattern $a^n b^m$ where $(n+m)$ is even; $n \geq 0$, $m \geq 0$, and $(n+m) > 0$

Answer: $a(aa)^*b(bb)^*|(aa)^+(bb)^+|(aa)^+|(bb)^+$

2. Social Security Number

Answer:

$\backslash s((\d{2}[1-9][1-9]\d{2})\backslash \d{1-9}\d)-\d{2}-(\d{3}[1-9]\d{2}[1-9]\d\backslash \d{1-9}\d{2})|(\d{2}[1-9][1-9]\d{2})\backslash \d{1-9}\d)\d{2}\backslash (\d{3}[1-9]\d{2}[1-9]\d\backslash \d{1-9}\d{2})|(\d{2}[1-9][1-9]\d{2})\backslash s$

3. Telephone Number

Answer:

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((\+((\b\d[1-9][1-9]\d)-(\d{2}[1-9]\d[1-9]\d|1-9\d{2})-(\d{2}[1-9]\d[1-9]\d|1-9\d{2})-(\d{4})\b)|(\+((\b\d[1-9][1-9]\d)-((\d{2}[1-9]\d[1-9]\d|1-9\d{2})\d)-((\d{2}[1-9]\d[1-9]\d|1-9\d{2})\d)-((\d{4})\b)\d)))
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