

1. Review the lecture slides which discuss Very Simple Programming Languages (VSPL).  
Next, observe the VSPL defined below and identify which sequences are valid.

$\langle \text{letter} \rangle ::= a \mid b \mid c \mid d \mid e$

$\langle \text{LETTER} \rangle ::= V \mid W \mid X \mid Y \mid Z$

$\langle \text{number} \rangle ::= 0 \mid 1 \mid 2 \mid 3 \mid 4$

$\langle \text{letters} \rangle ::= \langle \text{letter} \rangle \mid \langle \text{letter} \rangle \langle \text{letters} \rangle$

$\langle \text{LETTERS} \rangle ::= \langle \text{LETTER} \rangle \mid \langle \text{LETTER} \rangle \langle \text{LETTERS} \rangle$

$\langle \text{numbers} \rangle ::= \langle \text{number} \rangle \mid \langle \text{number} \rangle \langle \text{numbers} \rangle$

$\langle \text{sequence} \rangle ::= \langle \text{letters} \rangle \langle \text{LETTERS} \rangle \langle \text{numbers} \rangle \mid \langle \text{LETTERS} \rangle \langle \text{letters} \rangle \langle \text{numbers} \rangle$

Which of the following are valid sequences? You must clearly identify for each of the following sequences, which are valid, and which are invalid. Each sequence is worth 1 point.  
Submit your answer as hw02q1.pdf. [10 points]

- |               |            |
|---------------|------------|
| 1. CSE204     | <b>NO</b>  |
| 2. ebcXYZ125  | <b>YES</b> |
| 3. XYZcde344  | <b>YES</b> |
| 4. VWXa10     | <b>YES</b> |
| 5. edc135790Z | <b>NO</b>  |
| 6. dYaZeWkV   | <b>NO</b>  |
| 7. Zbad00     | <b>YES</b> |
| 8. aZ21       | <b>YES</b> |
| 9. XYZabc23   | <b>YES</b> |
| 10. Ey701     | <b>YES</b> |