Caesar's Cipher

Wk lv hdv zlw sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

abcdefghijklmnopqrstuvwxyz

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Ceasar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Ceaser's Cipher to decode the following:

Joke 1A
d orw ri shrsoh grq\'w olnh expshu vwlfnhuv.

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

```python
alphabet = "abcdefghijklmnopqrstuvwxyz"
isword(string)
```

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: uijt jt fbtz xjui qzupo.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wkfv lv hdvb zlwk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

```
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z | a | b | c | d | e | f | g |
```

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Ceasar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Ceaser's Cipher to decode the following:

Joke 1B

I grq’w plqg expshu vwlfnhuv.

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

```python
alphabet = "abcdefghijklmnopqrstuvwxyz"
isword(string)
```

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: vjku ku gcua ykvj ravjqp.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wklv lv hdvb zlwk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Caesar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Caesar's Cipher to decode the following:

Joke 1C

wr ph, d expshu vwlfnhu lv d vkruw fxw.

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

    alphabet = "abcdefghijklmnopqrstuvwxyz"
    isword(string)

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

    Test sentence: wklv lv hdvb zlwk sbwkrq.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wk lv hdv bzl wk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

```
abcdefghijklmnopqrstuvwxyz

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>abcdefghijklm</td>
</tr>
<tr>
<td>nopqrstuvwxyz</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>abcdefghijklm</td>
</tr>
</tbody>
</table>
```

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Caesar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Caesar's Cipher to decode the following:

Joke 1D
lw'v olnh d olwwoh vljq wkdw vdbv,

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

```
alphabet = "abcdefghijklmnopqrstuvwxyz"

isword(string)

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: xlmw mw iewc amxl tcxlsr.
```

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wklv lv hdvb zlwk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Caesar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Caesar's Cipher to decode the following:

Joke 1E
khh, ohw'v qhyhu kdqj rxw.

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

    alphabet = "abcdefghijklmnopqrstuvwxyz"
    isword(string)

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

    Test sentence: ymnx nx jfxd bnym udymts.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wk lv hdv zlwk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Caesar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Cæsar's Cipher to decode the following:

Joke 2A
I wklqn wkdw zkhq brx jhw guhvvhg lq wkh pruqlqj,

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

```
alphabet = "abcdefghijklmnopqrstuvwxyz"

isword(string)
```

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: znoy oy kgye cozn veznut.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wklv lv hdvb zlwk sbwkrq.

Background
In the 1\textsuperscript{st} century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Ceasar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Ceaser's Cipher to decode the following:

\textit{Joke 2B}

vrphwlphv brx'uh uhdooob pdnlqj d ghflvlrq

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

\begin{verbatim}
alphabet = "abcdefghijklmnopqrstuvwxyz"
isword(string)
\end{verbatim}

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: aopz pz lhzf dpao wfaovu.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wklv lv hdvb zlwk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

\[
\begin{array}{cccccccccccccccccccccccccc}
\text{abcdefghijklmnopqrstuvwxyz} \\
\text{defghijklmnopqrstuvwxyzabc}
\end{array}
\]

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Ceasar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Ceaser's Cipher to decode the following:

\textit{Joke 2C}

derxw brxu ehkdylru iru wkh gdb.

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

\begin{verbatim}
alphabet = "abcdefghijklmnopqrstuvwxyz"
isword(string)
\end{verbatim}

"alphabet" is a string containing all of the letters in order. \texttt{isword} is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: bpqa qa miag eqbp xgbpwv.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wklv lv hdvb zlwk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkh hdvw."

This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Caesar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Caesar's Cipher to decode the following:

Joke 2D
olnh li brx sxw rq iols-iorsv brx'uh vdblqj,

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

alphabet = "abcdefghijklmnopqrstuvwxyz"
isword(string)

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: cqrbrb njbhrfrcq yhczxw.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.
Caesar's Cipher

Wk lv hdvb zlwk sbwkrq.

Background
In the 1st century B.C., Julius Caesar communicated with his generals on the field through written communication. To avoid the message being read if intercepted, he used a simple cipher. He would write his communications, but hid the message by shifting each letter by 3 positions. Instead of "attack from the east," he would write "dwwdfn iurp wkhdv." This was an effective method at the time, particularly as most enemy soldiers were poorly educated and illiterate.

Part 1 – Simple manual encode
Use Caesar's Cipher to encode: "Hello world!"

Part 2 – Manual decode
Use Caesar's Cipher to decode the following:

Joke 2E

krsh l grq'w jhw fkdvhg wrgdb.

Part 3 – Algorithm
Write an algorithm to decode any message. Note, the characters may be shifted by any amount, not just 3. Your algorithm must be able to automatically detect the shift amount. To help you with this process, you have a few things available to you:

alphabet = "abcdefghijklmnopqrstuvwxyz"
isword(string)

"alphabet" is a string containing all of the letters in order. isword is a function that returns "True" if the string passed to the function is a valid word and "False" if not.

Test sentence: drsc sc okci gsdr zidryx.

Part 4 – Pseudocode
Turn the algorithm you created for part 3 into pseudocode.