Output redirection

```
$ echo If you can keep your head when all about you >if-1 # Output redirection
$ cat if-1
If you can keep your head when all about you
$ echo Are losing theirs and blaming it on you, >>if-1 # Append to file
$ cat if-1
If you can keep your head when all about you
Are losing theirs and blaming it on you,
$ echo If you can trust yourself when all men doubt you, >if-2
$ echo But make allowance for their doubting too. >>if-2
$ cat if-2
If you can trust yourself when all men doubt you,
But make allowance for their doubting too.
$ cat if-1 if-2 # Combine two files
If you can keep your head when all about you
Are losing theirs and blaming it on you,
If you can trust yourself when all men doubt you,
But make allowance for their doubting too.
$ cat if-1 if-2 >if # Output redirection
$ cat if
If you can keep your head when all about you
Are losing theirs and blaming it on you,
If you can trust yourself when all men doubt you,
But make allowance for their doubting too.
$
```

The standard error channel

```
$ touch afile
$ ls xyzzy >output # Display an error message
ls: cannot access xyzzy: No such file or directory
$ cat output # output is created but empty
$ ls xyzzy 2>output # Redirect error
$ cat output
ls: cannot access xyzzy: No such file or directory
$ ls -l afile xyzzy >output 2>error # Redirect output and error
$ cat output
-rw-r--r-- 1 dds dds 0 Dec  7 10:51 afile
$ cat error
ls: cannot access xyzzy: No such file or directory
$
```

Paging

```
$ less /usr/share/dict/words
A
a
aa
aal
aalii
aam
Aani
aardvark
aardwolf
Aaron
Aaronic
Aaronical
Aaronite
Aaronitic
Aaru
Ab
```

```
aba
Ababdeh
Ababua
abac
abaca
abacate
abacay
/usr/share/dict/words 0%
$
```

Input redirection

```
$ bc
40 + 2
42
scale = 60
sqrt(2)
1.414213562373095048801688724209698078569671875376948073176679

$ echo 2 ^ 64 - 1 >chess-rice
$ bc <chess-rice
18446744073709551615
$ cat -n <if
     1  If you can keep your head when all about you
     2  Are losing theirs and blaming it on you,
     3  If you can trust yourself when all men doubt you,
     4  But make allowance for their doubting too.
$
```