Задание 1.

```
yukei@yukei:~/TEST/tmp$ cat hello.c
#include <stdio.h>
#include <unistd.h>

int main(int argc, char *argv[]) {
        printf("Hello!\n");
        sleep(15);
        return 0;
}
```

```
yukei@yukei:~/TEST/tmp$ arm-linux-gnueabihf-gcc -static -o init hello.c
```

```
yukei@yukei:~/TEST/tmp$ echo init | cpio -o -H newc | gzip > initranfs.cpio.gz
901 блок
```

```
yukei@yukei:~/TEST/tmp$ ls
FS  hello.c  initranfs.cpio.gz  vexpress-v2p-ca9.dtb  zImage
```

```
yukei@yukei:~/TEST/tmp$ QEMU_AUDIO_DRV=none qemu-system-arm -M vexpress-a9 -kern
el zImage -dtb vexpress-v2p-ca9.dtb -initrd initranfs.cpio.gz -append "console=t
tyAMA0" -nographic
```

```
Run /init as init process
Hello!
drm-clcd-pl111 10020000.clcd: DVI muxed to daughterboard 1 (core tile) CLCD
drm-clcd-pl111 10020000.clcd: initializing Versatile Express PL111
i2c 0-0039: deferred probe pending: sii902x: Failed to find remote bridge
amba 1000f000.wdt: deferred probe pending: (reason unknown)
amba 10020000.clcd: deferred probe pending: (reason unknown)
amba 100e0000.memory-controller: deferred probe pending: (reason unknown)
amba 100e1000.memory-controller: deferred probe pending: (reason unknown)
amba 100e5000.watchdog: deferred probe pending: (reason unknown)
Kernel panic - not syncing: Attempted to kill init! exitcode=0x00000000
CPU: 0 UID: 0 PID: 1 Comm: init Not tainted 6.17.0+ #2 NONE
Hardware name: ARM-Versatile Express
Call trace:
 unwind_backtrace from show_stack+0x10/0x14
 show_stack from dump_stack_lvl+0x50/0x64
 dump_stack_lvl from vpanic+0xc4/0x2c8
 vpanic from panic+0x2c/0x30
 panic from do_exit+0x974/0x978
 do_exit from do_group_exit+0x34/0x84
 do_group_exit from pid_child_should_wake+0x0/0x60
---[ end Kernel panic - not syncing: Attempted to kill init! exitcode=0x00000000
 ]---
```

Задание 2.

```
yukei@yukei:~/TEST/busybox-1.36.1$ ARCH=arm make defconfig
  HOSTCC   scripts/basic/fixdep
  HOSTCC   scripts/basic/split-include
```

В menuconfig устанавливаем CrossCompilePrefix на arm-linux-gnueabihf- и устанавливаем статическую компиляцию.

```
yukei@yukei:~/TEST/busybox-1.36.1$ ARCH=arm make menuconfig
  HOSTLD   scripts/kconfig/mconf
  HOSTCC   scripts/kconfig/lxdialog/checklist.o
  HOSTCC   scripts/kconfig/lxdialog/inputbox.o
  HOSTCC   scripts/kconfig/lxdialog/lxdialog.o
  HOSTCC   scripts/kconfig/lxdialog/menubox.o
  HOSTCC   scripts/kconfig/lxdialog/msgbox.o
  HOSTCC   scripts/kconfig/lxdialog/textbox.o
  HOSTCC   scripts/kconfig/lxdialog/util.o
  HOSTCC   scripts/kconfig/lxdialog/yesno.o
  HOSTLD   scripts/kconfig/lxdialog/lxdialog
scripts/kconfig/mconf Config.in
#
# using defaults found in .config
#


*** End of configuration.
*** Execute 'make' to build the project or try 'make help'.

yukei@yukei:~/TEST/busybox-1.36.1$ make -j2
```

```
yukei@yukei:~/TEST/busybox-1.36.1$ make install
  ./_install//bin/arch -> busybox
  ./_install//bin/ash -> busybox
  ./_install//bin/base32 -> busybox
```

```
yukei@yukei:~/TEST/busybox-1.36.1/_install$ find . | cpio -o -H newc | gzip > in
itranfs.cpio.gz
3136 блоков
```

```
yukei@yukei:~/TEST/tmp$ QEMU_AUDIO_DRV=none qemu-system-arm -M vexpress-a9 -kern
el zImage -dtb vexpress-v2p-ca9.dtb -initrd initranfs.cpio.gz -append "console=t
tyAMA0 rdinit=/bin/ash" -nographic

~ # ls
bin                 initranfs.cpio.gz  sbin
dev                 root               usr
~ #
```

```
~ # mkdir proc
~ # mkdir sys
~ # ls
bin                  initranfs.cpio.gz  root                sys
dev                  proc               sbin                usr
~ # mount -t proc proc proc
~ # ls proc
1               30             51            crypto        mtd
10              31             52            device-tree   net
11              32             53            devices       pagetypeinfo
12              33             54            diskstats     partitions
```