Reference

Powers of 2 ($y = 2^x$):

x	0	1	2	3	4	5	6	7	8	9	10	11	12
y	1	2	4	8	16	32	64	128	256	512	1,024	2,048	4,096

x	13	14	15	16
y	8,192	16,384	32,768	65,536

Note that in all questions concerning C:

- `uint8_t` is an 8-bit unsigned integer type
- `uint16_t` is a 16-bit unsigned integer type
- `uint32_t` is a 32-bit unsigned integer type
- `int8_t` is an 8-bit signed two's complement integer type
- `int16_t` is a 16-bit signed two's complement integer type
- `int32_t` is a 32-bit signed two's complement integer type

x86-64 registers:

Callee-saved: `%rbx`, `%rbp`, `%r12`, `%r13`, `%r14`, `%r15`

Caller-saved: `%r10`, `%r11`

Return value: `%rax`

Arguments: `%rdi`, `%rsi`, `%rdx`, `%rcx`, `%r8`, `%r9`

Note that argument registers and return value register are effectively caller-saved.

Registers and sub-registers:

Register	Low 32 bits	Low 16 bits	Low 8 bits
`%rax`	`%eax`	`%ax`	`%al`
`%rbx`	`%ebx`	`%bx`	`%bl`
`%rcx`	`%ecx`	`%cx`	`%cl`
`%rdx`	`%edx`	`%dx`	`%dl`
`%rbp`	`%ebp`	`%bp`	`%bpl`
`%rsi`	`%esi`	`%si`	`%sil`
`%rdi`	`%edi`	`%di`	`%dil`
`%r8`	`%r8d`	`%r8w`	`%r8b`
`%r9`	`%r9d`	`%r9w`	`%r9b`
`%r10`	`%r10d`	`%r10w`	`%r10b`
`%r11`	`%r11d`	`%r11w`	`%r11b`
`%r12`	`%r12d`	`%r12w`	`%r12b`
`%r13`	`%r13d`	`%r13w`	`%r13b`
`%r14`	`%r14d`	`%r14w`	`%r14b`
`%r15`	`%r15d`	`%r15w`	`%r15b`

Stack alignment: `%rsp` must contain an address that is a multiple of 16 when any `call` instruction is executed.

Operand size suffixes: **b** = 1 byte, **w** = 2 bytes, **l** = 4 bytes, **q** = 8 bytes (Examples: `movb`, `movw`, `movl`, `movq`)