* 1. 0.0

exponent = 0000 0000

fraction = 0000 0000 0000 0000 0000 0000

* 1. 6.5

exponent = 1000 0001

fraction = 0101 0000 0000 0000 0000 0000

* 1. 4.0

exponent = 1000 0001

fraction = 0000 0000 0000 0000 0000 0000

* 1. -4.0

exponent = 1000 0001

fraction = 1000 0000 0000 0000 0000 0000

single precision = ~(+/-)3.4e38 =

(+/-)1 x 2127 x 1.11111111111111111111111two

double precision = ~(+/-)1.8e308 =

(+/-)1 x 21024 x 1.999999999999999777955395074968691915273[…]

1. (answers in form (exponent, fraction))

0.375: ( 0111 1101, 0100 0000 0000 0000 0000 0000 )

28.00: ( 1000 0011, 0110 0000 0000 0000 0000 0000 )

* 1. d

1. (answers in form (exponent, fraction))
   1. ( 0111 1000, 0000 0000 0000 0000 0000 0000 )
   2. ( 0111 1100, 1111 1111 1100 0000 0000 0000 )
2. After including the “hidden 1”, there are 24 bits of fraction in a single precision floating points and 53 bits in double precision.
3. 0xBE00 = -1.5 =

( 0000 0000 0000 0000, 1110 0000 0000 0000 )