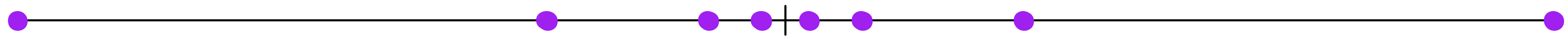
$\pm M \times 2^{\pm E}$ 1 bit for $\pm$ k bits for $\pm E$ n bits for M

$k = 8$ or 11 $n = 23$ or 52

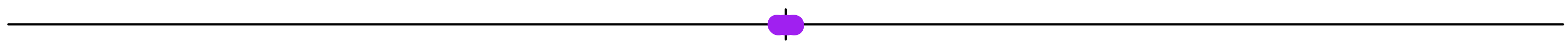


Normalized: $\pm E$ is not its maximum or minimum value

$1 \le M < 2$

$\pm$	$0 < \pm E + 2^{k-1} - 1 < 2^k - 1$	$(M-1)2^n$

$\pm E = e + 1 - 2^{k-1}$ $M = 1 + f/2^n$

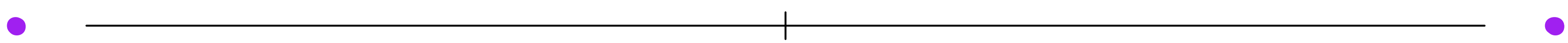


Denormalized: $\pm E$ is its minimum value (which is negative)

$0 \le M < 1$

$\pm$	0	$M2^n$

$\pm E = 2 - 2^{k-1}$ $M = f/2^n$



Infinity: $\pm E$ is its maximum value

$\pm$	$2^k - 1$	0

Not-a-Number: $\pm E$ is its maximum value   (many representations!)

$\pm$	$2^k - 1$	non-0

$\pm M \times 2^{\pm E}$ | 1 bit for $\pm$ | k bits for $\pm E$ | n bits for M

k = 8 or 11 | n = 23 or 52

$k = 3 \quad n = 3$

0	0	0	0	0	0	0

$\pm$=

$\pm E$=

M=

Normalized: $\pm E$ is not its maximum or minimum value

$1 \le M < 2$

$\pm$	$0 < \pm E + 2^{k-1} - 1 < 2^k - 1$	$(M-1)2^n$
	$\pm E = e + 1 - 2^{k-1}$	$M = 1 + f/2^n$

Denormalized: $\pm E$ is its minimum value (which is negative)

$0 \le M < 1$

$\pm$	0	$M2^n$
	$\pm E = 2 - 2^{k-1}$	$M = f/2^n$

Infinity: $\pm E$ is its maximum value

$\pm$	$2^k - 1$	0

Not-a-Number: $\pm E$ is its maximum value (many representations!)

$\pm$	$2^k - 1$	non-0

$k = 3 \quad n = 3$

1	0	0	1	0	0	1

$\pm$=

$\pm E$=

M=

$\boxed{\pm M \times 2^{\pm E}}$ 1 bit for $\pm$ | k bits for $\pm E$ (k = 8 or 11) | n bits for M (n = 23 or 52)

Normalized: $\pm E$ is not its maximum or minimum value

$1 \le M < 2$

$\pm$	$0 < \pm E + 2^{k\text{-}1}\text{-}1 < 2^k\text{-}1$	$(M\text{-}1)2^n$
	$\pm E = e + 1 \text{-} 2^{k\text{-}1}$	$M = 1 + f/2^n$

Denormalized: $\pm E$ is its minimum value (which is negative)

$0 \le M < 1$

$\pm$	0	$M2^n$
	$\pm E = 2 \text{-} 2^{k\text{-}1}$	$M = f/2^n$

Infinity: $\pm E$ is its maximum value

$\pm$	$2^k\text{-}1$	0

Not-a-Number: $\pm E$ is its maximum value (many representations!)

$\pm$	$2^k\text{-}1$	non-0

$\pm M \times 2^{\pm E}$ | 1 bit for ± | k bits for $\pm E$ (k = 8 or 11) | n bits for M (n = 23 or 52)

$k = 3 \quad n = 3$

1	1	1	1	0	0	0

Normalized: $\pm E$ is not its maximum or minimum value

$1 \le M < 2$

±	$0 < \pm E + 2^{k-1} - 1 < 2^k - 1$	$(M-1)2^n$
	$\pm E = e + 1 - 2^{k-1}$	$M = 1 + f/2^n$

Denormalized: $\pm E$ is its minimum value (which is negative)

$0 \le M < 1$

±	0	$M2^n$
	$\pm E = 2 - 2^{k-1}$	$M = f/2^n$

Infinity: $\pm E$ is its maximum value

±	$2^k - 1$	0

Not-a-Number: $\pm E$ is its maximum value (many representations!)

±	$2^k - 1$	non-0

± =

$\pm E$ =

M =

$k = 3 \quad n = 3$

0	0	1	0	1	0	0

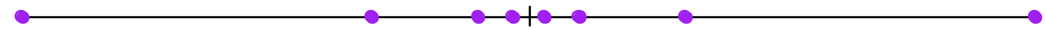
$\pm$=

$\pm E$=

M=

$\boxed{\pm M \times 2^{\pm E}}$ 1 bit for ± k bits for $\pm E$ n bits for M

k = 8 or 11 n = 23 or 52

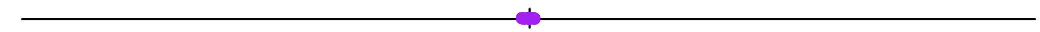


Normalized: $\pm E$ is not its maximum or minimum value

$1 \le M < 2$

±	$0 < \pm E + 2^{k-1} - 1 < 2^k - 1$	$(M-1)2^n$

$\pm E = e + 1 - 2^{k-1}$ $M = 1 + f/2^n$

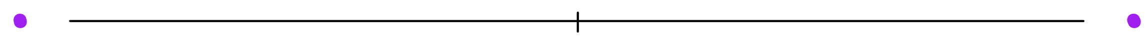


Denormalized: $\pm E$ is its minimum value (which is negative)

$0 \le M < 1$

±	0	$M2^n$

$\pm E = 2 - 2^{k-1}$ $M = f/2^n$



Infinity: $\pm E$ is its maximum value

±	$2^k - 1$	0

Not-a-Number: $\pm E$ is its maximum value (many representations!)

±	$2^k - 1$	non-0

$k = 3 \quad n = 4$

0	0	0	0	0	0	1	0

$\pm$=

$\pm E$=

M=

$\boxed{\pm M \times 2^{\pm E}}$ 1 bit for $\pm$ k bits for $\pm E$ n bits for M

k = 8 or 11 n = 23 or 52

Normalized: $\pm E$ is not its maximum or minimum value

$1 \le M < 2$

$\pm$	$0 < \pm E + 2^{k\text{-}1} - 1 < 2^k - 1$	$(M-1)2^n$

$\pm E = e + 1 - 2^{k\text{-}1}$ $M = 1 + f/2^n$

Denormalized: $\pm E$ is its minimum value (which is negative)

$0 \le M < 1$

$\pm$	0	$M2^n$

$\pm E = 2 - 2^{k\text{-}1}$ $M = f/2^n$

Infinity: $\pm E$ is its maximum value

$\pm$	$2^k - 1$	0

Not-a-Number: $\pm E$ is its maximum value   (many representations!)

$\pm$	$2^k - 1$	non-0