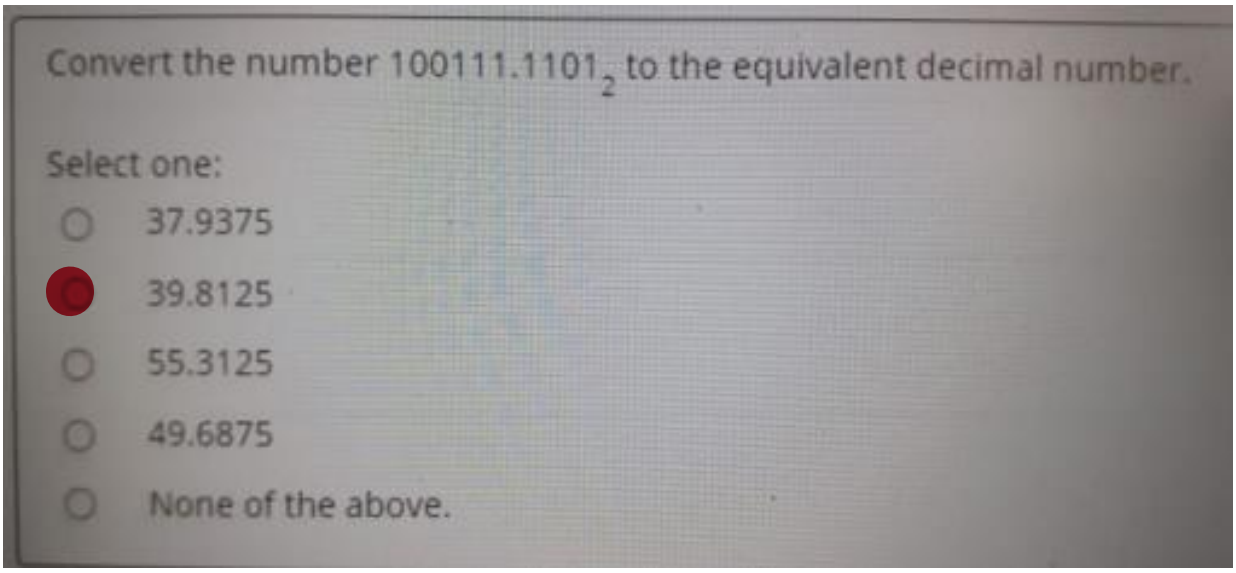
LESSON 1


Convert the number 100111.1101_2 to the equivalent decimal number.
Select one:
37.9375
39.8125
55.3125
49.6875
None of the above.

100111.1101_2

1	0	0	1	1	.	1
2^5	2^4	2^3	2^2	2^1		2^0

$= (32 \times 1) + (16 \times 0) + (8 \times 0) + (4 \times 1) + (2 \times 1) + (1 \times 1)$

$= 32 + 0 + 0 + 4 + 2 + 1$

$= 39$

.	1	1	0	1
	$\frac{1}{2^1}$	$\frac{1}{2^2}$	$\frac{1}{2^3}$	$\frac{1}{2^4}$
	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$
	0.5	0.25	0.125	0.0625

$= (0.5) + (0.25) + (0.0625)$

$= 0.8125$

$= 39.8125_{10}$

32 16 8 4 2 1 0.5 0.25 0.125 0.0625

1	0	0	1	1	1	.	1	1	0	1
32			4	2	1		0.5	0.25		0.0625

$32 + 4 + 2 + 1 = 39$

$0.5 + 0.25 + 0.0625 = 0.8125$

$= 39.8125_{10}$

Convert the number 300.75_{10} to the equivalent binary number.

Select one:

- 100010001.01
- 100010001.111
- 100101100.11
- 1111101.001
- None of the above.

300.75_{10}

256 128 64 32 16 8 4 2 1

1 0 0 1 0 1 1 0 0

$0.75 \times 2 = 1.50$

$0.50 \times 2 = 1.0$ ↓

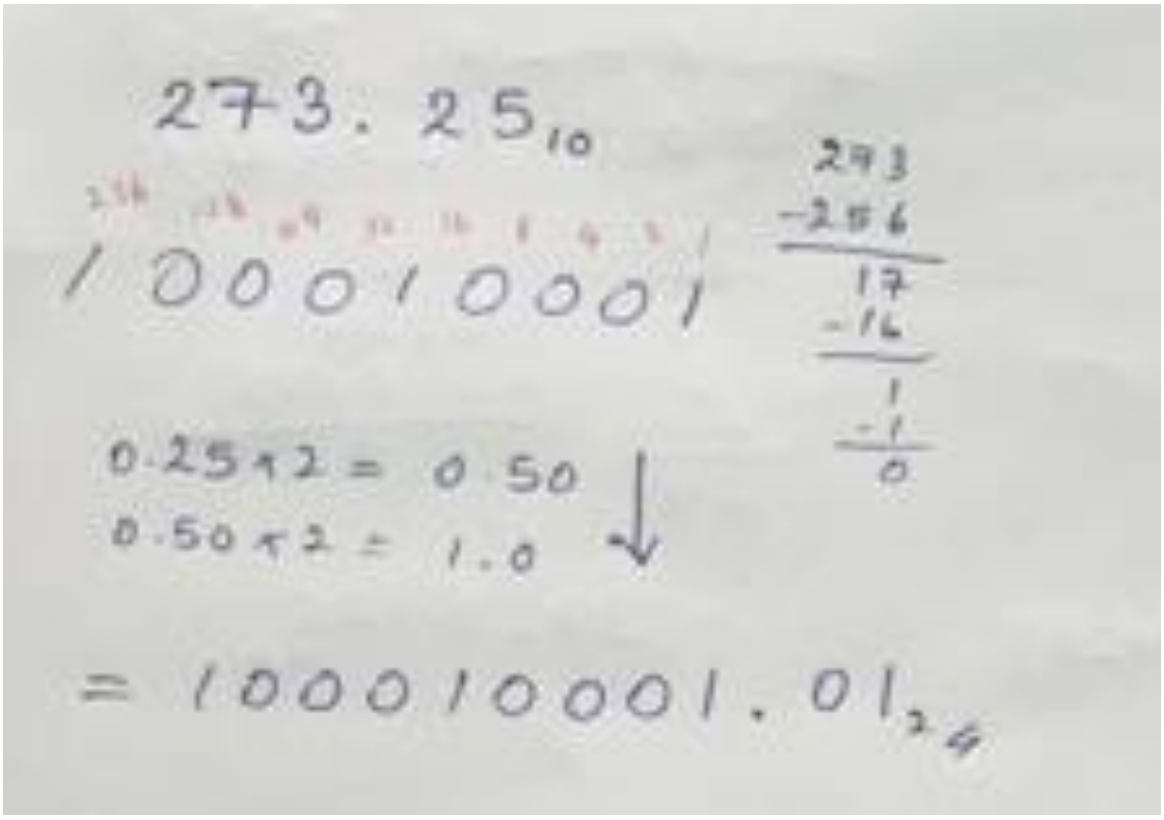
$= 100101100.11_2$

300
-256
44
-32
12
-8
4
-4
0

Convert the number 273.25_{10} to the equivalent binary number.

Select one:

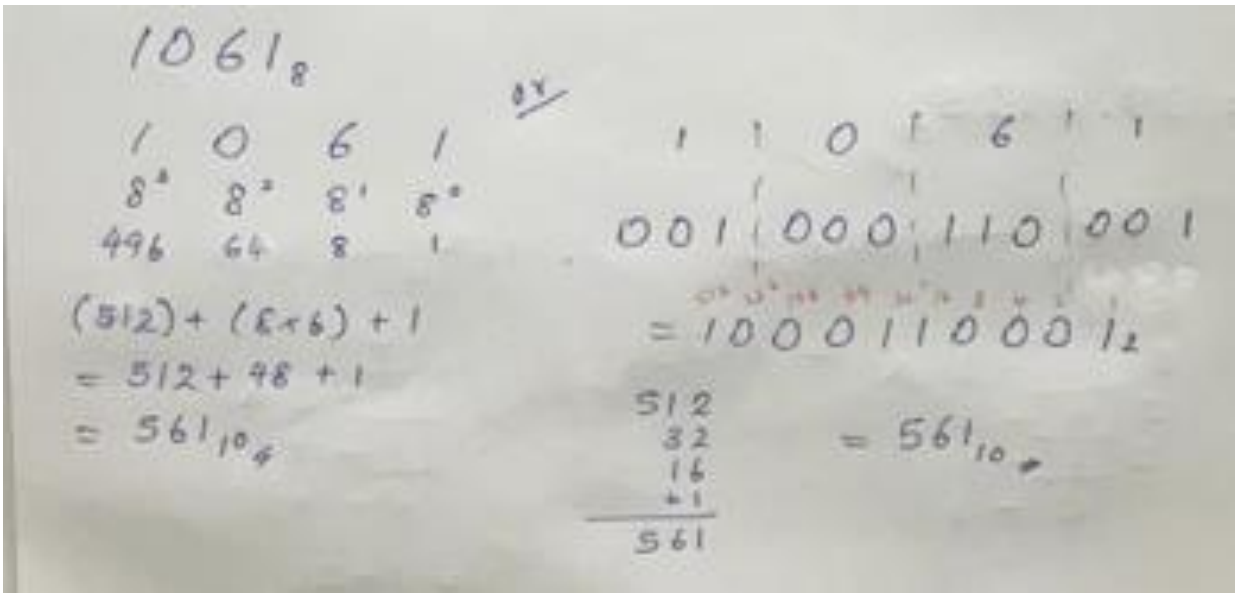
- 100010001.01 100010001.0
- 100010001.111
- 100101100.11
- 1111101.001
- None of the above



Convert the number 1061_8 to equivalent decimal numbers.

Select one:

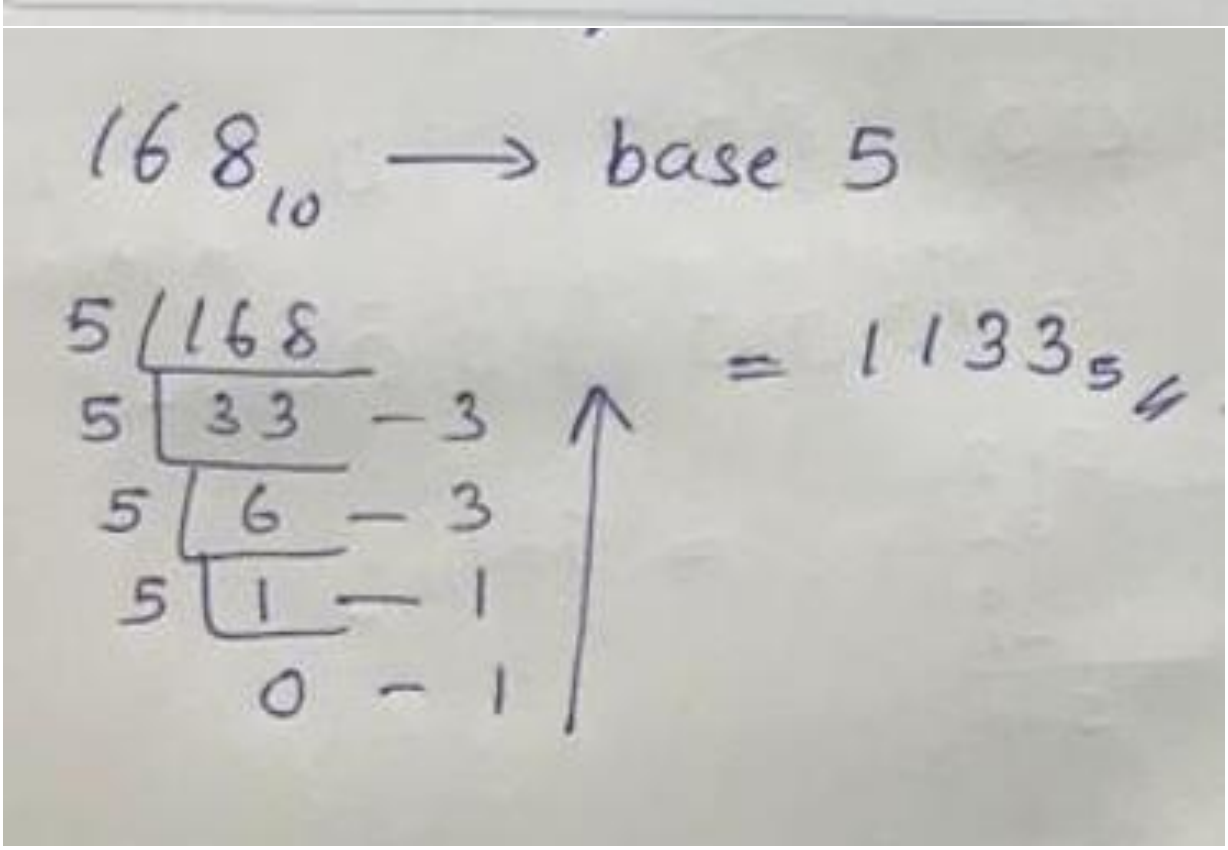
- 561
- 692
- 298
- 332
- None of the above.



Convert the number 168_{10} to a base 5 number system.

Select one:

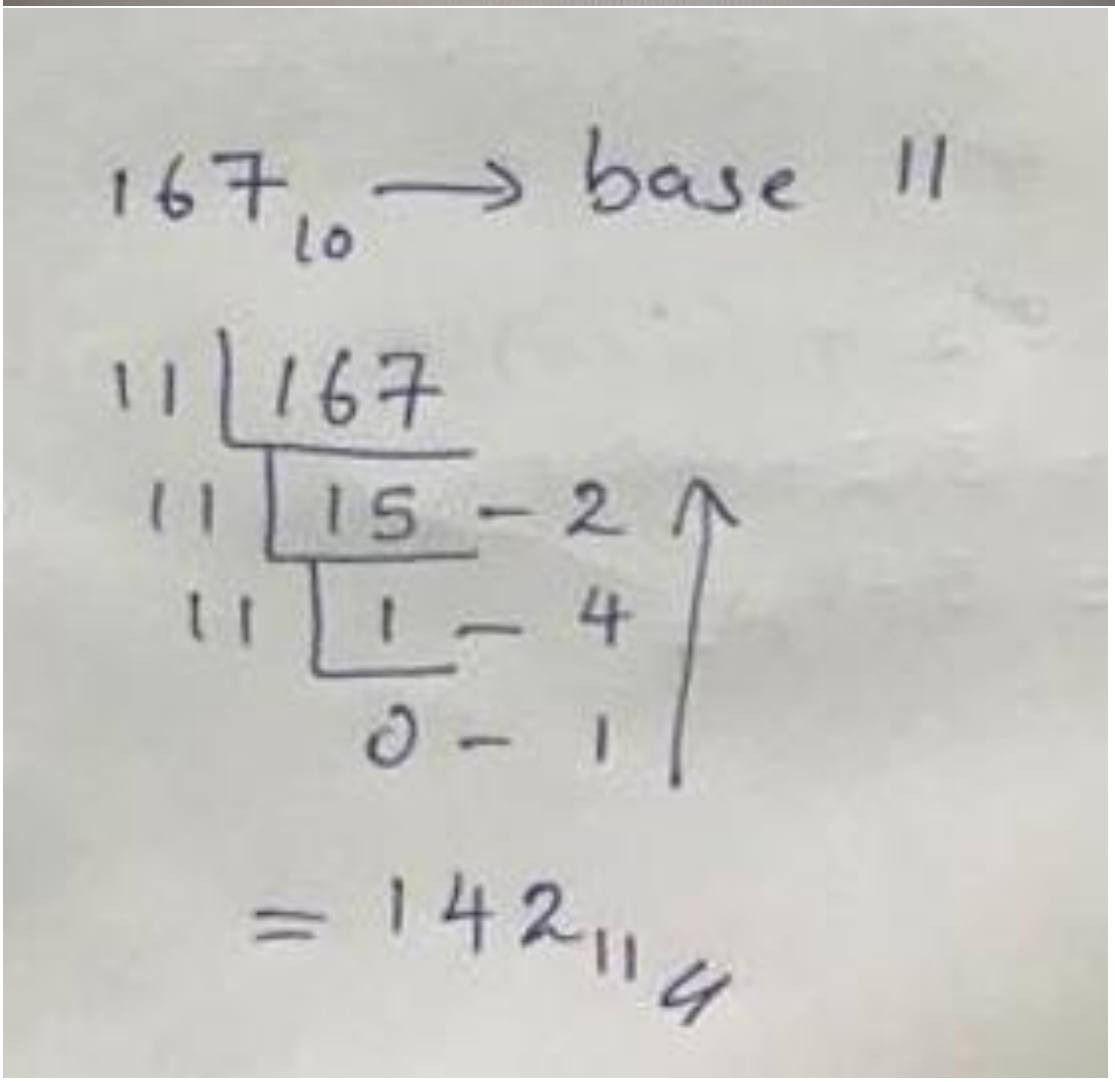
- 2200
- 4412
- 1133
- 2002
- None of the above



Convert the number 167_{10} to a base 11 positional number system.

Select one:

- 20A
- 812
- 113
- 11B
- None of the above.



Convert the number 221122_3 to equivalent decimal numbers.

Select one:

- 561
- 692
- 298
- 332
- None of the above.

$2\ 2\ 1\ 1\ 2\ 2_3 \longrightarrow$ base 10 (decimal)

$\downarrow\ \downarrow\ \downarrow\ \downarrow\ \downarrow\ \downarrow$

$3^5\ 3^4\ 3^3\ 3^2\ 3^1\ 3^0$

$243\ 81\ 27\ 9\ 3\ 1$

$= (2 \times 243) + (81 \times 2) + (27 \times 1) + (9 \times 1) + (3 \times 2) + (1 \times 2)$

$= 486 + 162 + 27 + 9 + 6 + 2$

$= \underline{692_{10}}$