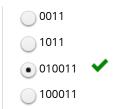
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## HOMEWORK 1. NUMBERS (1/1 point)

Which of the following is a correct result from the addition of the unsigned binary numbers 0111 and 1100?



#### **EXPLANATION**



011

+ <u>1100</u> 10011

 $010011\ is\ the\ same\ number\ as\ 10011\ in\ unsigned\ binary.$ 

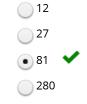
Final Check Save Hide Answer You have used 1 of 2 submissions

### **HOMEWORK 2. NUMBERS**

Consider a trinary (Base 3) number system with trit (trinary digit) positions.

# HOMEWORK 2 A. NUMBERS (1/1 point)

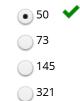
How many numbers can be represented with four trit positions?



# **EXPLANATION**

 $3^4 = 81$  numbers.

Final Check Save Hide Answer You have used 1 of 2 submissions



#### **EXPLANATION**

 $1 \times 3^3 + 2 \times 3^2 + 1 \times 3^1 + 2 \times 3^0 = 27 + 18 + 3 + 2 = 50.$ 

Final Check

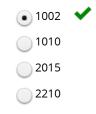
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## HOMEWORK 2 C. NUMBERS (1/1 point)

What is the trinary value of the decimal number 29?



### **EXPLANATION**

Can use either method 1 or 2 as in binary. Using method 1:

29/3 = 9 r2 trit0

9/3 = 3 r0 trit1

3/3 = 1 r0 trit2

1/3 = 0 r1 trit3

1002.

Final Check

Save

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### HOMEWORK 3. NUMBERS

In *fixed-point* number representation a certain number of digits are assumed to be to the right of the radix point. For example, the fixed point decimal number 23.45 has two digits to the right of the decimal point, and these vales 4 and 5 have weights  $10^{-1}$  and  $10^{-2}$ , respectively.

Now consider a fixed-point binary number with two digits to the right of the binary point.

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What is the decimal value of the unsigned fixed-point binary number 10.11?



## **EXPLANATION**

$$2^{1} + 2^{-1} + 2^{-2} = 2 + 0.5 + 0.25 = 2.75.$$

Final Check

Save

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You have used 1 of 2 submissions

# HOMEWORK 3 B. NUMBERS (1/1 point)

What is the decimal value of the two's complement fixed-point binary number 1010.11?

-5.75 -5.25 12.25 12.75

#### **EXPLANATION**

$$-(2^3) + 2^1 + 2^{-1} + 2^{-2} = -8 + 2 + 0.5 + 0.25 = -5.25.$$

Final Check

Save

Hide Answer

You have used 1 of 2 submissions

# HOMEWORK 3 C. NUMBERS (1/1 point)

What is the two's complement fixed-point representation of decimal 6.25?



# **EXPLANATION**

The number is positive so the leftmost digit must be 0. 0110 is 6 and .01 is 0.25, so 0110.01 = 6.25.



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