

Review Exercises: Convert the following Binary #'s to Base-10

1. $10100 \rightarrow 16 + 4$ Base-10: 20

Diagram: 10100 with arrows pointing from 16 to the first 1, 4 to the second 1, 8 to the first 0, and 2 to the second 0.

2. $11011 \rightarrow 16 + 8 + 2 + 1$ Base-10: 27

3. $11111 \rightarrow 16 + 8 + 4 + 2 + 1$ Base-10: 31

Notes and Practice: Convert the following Hexadecimal #'s to Base-10

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 \rightarrow A
- 11 \rightarrow B
- 12 \rightarrow C
- 13 \rightarrow D
- 14 \rightarrow E
- 15 \rightarrow F

$$\overline{16^3} \quad \overline{16^2} \quad \overline{16^1} \quad \overline{16^0}$$

$$10(16^1) + 2(16^0)$$

$$160 + 2$$

$$162$$

4. A2 \rightarrow 162

5. F3 $\rightarrow 15(16^1) + 3(16^0) \rightarrow$ 243

6. AB4 $\rightarrow 10(16^2) + 11(16^1) + 4(16^0) \rightarrow$ 2740

Question: In Java, the data type 'int' can store four bytes of memory. How many possible values can be represented with the integer data type? Two options for 32 digits gives 2³² possible #'s.