

Computer Science Illuminated, Seventh Edition

ASQZ: Chapter 2

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Import Settings:

Base Settings: Brownstone Default

Information Field: Complexity

Information Field: Ahead

Information Field: Subject

Information Field: Title

Information Field: Feedback

Information Field: Taxonomy

Information Field: Objective

Highest Answer Letter: E

Multiple Keywords in Same Paragraph: No

NAS ISBN13: 9781284155617, add to Ahead, Title tags

Chapter: Chapter 02 - Quiz

Multiple Choice

1. How many digits are there in the binary number system?

A) 1

B) 2

C) 7

D) 8

E) 9

Ans: B

Complexity: Easy

Ahead: Positional Notation

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2. How many digits are there in the hexadecimal number system?

A) 0

B) 9

C) 10

D) 15

E) 16

Ans: E

Complexity: Moderate

Ahead: Positional Notation

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Title: Binary Values and Number Systems

3. What is the decimal value of the largest digit in the hexadecimal number system?

A) 0

B) 9

C) 10

D) 15

E) 16

Ans: D

Complexity: Difficult

Ahead: Positional Notation

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True/False

1. True or False? There is one set of underlying principles governing all numbers systems.

Ans: True

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

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2. True or False? The base of a number system determines the number of digit positions that can be used for any number in the system.

Ans: False

Complexity: Difficult

Ahead: Positional Notation

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3. True or False? The base of the hexadecimal number system is 15.

Ans: False

Complexity: Easy

Ahead: Positional Notation

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4. True or False? A value of a number in any base can be expressed as a polynomial expression.

Ans: True

Complexity: Moderate

Ahead: Positional Notation

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5. True or False? Grace Murray Hopper is credited with being the first programmer.

Ans: False

Complexity: Moderate

Ahead: Positional Notation

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6. True or False? Three octal digits can be stored in one byte.

Ans: False

Complexity: Difficult

Ahead: Positional Notation

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Short Answer

1. A(n) _____ is a unit of an abstract mathematical system subject to the laws of arithmetic.

Ans: number

Complexity: Easy

Ahead: Numbers and Computing

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2. The value of a number in any base can be expressed as a(n) _____ in which each term is made up of a digit multiplied by the base raised to a power.

Ans: polynomial

Complexity: Easy

Ahead: Positional Notation

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3. The highest digit in base 16 is _____.

Ans: F

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

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4. In base 16, the digit D is used to represent the decimal value _____.

Ans: 13

Complexity: Difficult

Ahead: Positional Notation

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5. A group of eight bits is called a(n) _____.

Ans: byte

Complexity: Easy

Ahead: Positional Notation

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Essay

1. What is a rational number?

Ans: An integer or the quotient of two integers (excluding division by zero).

Complexity: Easy

Ahead: Numbers and Computing

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Title: Binary Values and Number Systems

2. What is a natural number?

Ans: The number 0 or any number that can be obtained by repeatedly adding 1 to it.

Complexity: Easy

Ahead: Numbers and Computing

Subject: Chapter 2

Title: Binary Values and Number Systems

3. What is a number?

Ans: A unit in an abstract mathematical system subject to the laws of mathematics.

Complexity: Easy

Ahead: Numbers and Computing

Subject: Chapter 2

Title: Binary Values and Number Systems

4. What is the base of a number system?

Ans: The foundational value that dictates the number of digits and the value of digit positions.

Complexity: Easy

Ahead: Positional Notation

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5. What is the value of the largest digit in the base X number system (for any positive integer X)?

Ans: $X - 1$

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Complexity: Moderate

Ahead: Positional Notation

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6. What is the fundamental concept at the intersection of all branches of modern mathematics?

Ans: The concept of zero.

Complexity: Easy

Ahead: Positional Notation

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