

King Abdulaziz University
The Applied College
Computer and Information Technology Department

ACCS 120: Introduction to Computing Concepts

ACCS 120: (N3)

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Homework 1: Module 2 - Numbering Systems

15th February 2026

Students are required to answer all questions. All solution steps must be clearly shown, and all answers must be handwritten. This homework must be submitted in person on Thursday, **2 April 2026**. Late submissions will not be accepted.

Answer the following questions.

Q1. Convert the following decimal numbers into corresponding binary format and show how it is stored using a single **byte representation**. Show the exact steps using the **division** method.

- a) 13
- b) 100
- c) 125
- d) 500

Q2. Convert the following binary numbers into corresponding octal format.

- a) 1100001101011100011
- b) 101111001110001110

Q3. Convert the following binary numbers into corresponding hexadecimal format.

- a) 1100001101011100011
- b) 101111001110001110

Q4. Convert the following decimal numbers into corresponding binary, octal, and hexadecimal format.

- a) 5.5
- b) 15.25
- c) 25.3125
- d) 64.625

Q5. Convert the following Octal numbers into decimal.

- a) 175
- b) 567

Q6. Convert the following hexadecimal numbers into decimal.

- a) ABCD
- b) EF78B

Q7. Fill in the table below with **different representations** of the given decimal number.

Decimal	Binary	Octal	Hexadecimal
145.25			
29.75			
26.33			

Q8. Perform the following addition in binary. Represent both numbers using one byte, and clearly show all intermediate steps.

- a) $48 + 25$
- b) $77 + 23$

Q9. Perform the following subtraction in binary? Represent both numbers using one byte and show all steps.

- c) $61 - 32$
- d) $149 - 86$

Q10. Multiply the following binary numbers.

$$\begin{array}{r} 10111 \\ 11010 \\ \hline \end{array}$$

Q11. Perform the following addition in octal.

$$\begin{array}{r} 7612 \\ + 1345 \\ \hline \end{array}$$

Q12. Perform the following octal subtraction.

$$\begin{array}{r} 7612 \\ - 1345 \\ \hline \end{array}$$

Q13. Perform the following hexadecimal addition.

$$\begin{array}{r} CD89 \\ + 98AB \\ \hline \end{array}$$

Q14. Perform the following hexadecimal subtraction.

$$\begin{array}{r} CD89 \\ - 98AB \\ \hline \end{array}$$