**Worksheet 24 - Error detection**

1. Find the two dimensional bit parity for the following bit strings:

Consider even parity for a. and b.

Consider odd parity for c. and d.

1 0 1 0 1 0 1 |

1 1 0 0 1 1 1 |

0 0 0 1 1 1 0 |

1 1 0 0 0 0 0 |

0 1 0 0 1 1 0 |

1 0 0 0 0 0 1 |

0 0 0 1 1 1 1 |

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0 0 1 0 1 0 1 |

0 1 0 0 1 1 1 |

0 0 0 1 1 0 0 |

1 1 1 0 0 0 0 |

0 1 1 0 1 1 0 |

1 0 1 0 0 1 1 |

0 0 0 0 1 1 1 |

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1 0 1 0 1 0 1 |

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0 0 0 1 1 1 0 |

1 1 0 0 0 0 0 |

0 1 0 0 1 1 0 |

1 0 0 0 0 0 1 |

0 0 0 1 1 1 1 |

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1. Find the checksum of the following 8-bit strings
   1. 10101010 and 00001111
   2. 11100011 and 10011001
   3. 00110101 and 00100011
   4. 11000111 and 00011101
2. Find the CRC for the following data (D) and generator (G) bits:
   1. D = 10110010, G = 1001
   2. D = 10011010, G = 1101
   3. D = 1100101000110010, G = 1001
   4. D = 1110010101100001, G = 100000111
   5. D = 1100001100001001, G = 100000111