**Data Types Worksheet 2**

**Binary addition and Two’s Complement**

Add these binary numbers together

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|  |  | **Answers (Extra Marks for Converting to Decimal**) |
| 1 | 0110001100101011 | 010001110 99 + 43 = 142 |
| 2 | 0011011001101100 | 010100010 54 + 108 = 162 |
| 3 | 0110011000110110 | 010011100 102 + 54 = 156 |
| 4 | 0100101100011011 | 001100110 75 + 27 = 102 |
| 5 | 0001111100011101 | 000111100 31 + 29 = 60 |
| 6 | 0101100001100100 | 010111100 88 + 100 = 188 |
| 7 | 0111100001110100 | 011101100 120 + 116 = 236 |
| 8 | 0100111101010011 | 010100010 79 + 83 = 162 |
| 9 | 0010011100110100 | 001011011 39 + 52 = 91 |
| 10 | 1010011101000001 | 011101000 167 + 65 = 232 |

Convert these binary numbers to their negative denary equivalents

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|  |  | **Answers (Extra Marks for Converting to Decimal**) |
| 11 | 1110010110 | –106 |
| 12 | 1111110111 | –9 |
| 13 | 1110011111 | –97 |
| 14 | 1110100100 | –92 |
| 15 | 1110101101 | –83 |
| 16 | 1110000001 | –127 |
| 17 | 1110011100 | –100 |
| 18 | 1110101011 | –85 |
| 19 | 1111111001 | –7 |
| 20 | 1111011001 | –39 |