

Show your work. Not showing your work will have points deducted.

Convert the following binary numbers to Decimal. Circle or highlight your answers.

1. $01101101_2 = \boxed{109_{10}}$

$$\begin{array}{r} 0\ 1\ 1\ 0\ 1\ 1\ 0\ 1 \\ \hline 128\ 64\ 32\ 16\ 8\ 4\ 2\ 1 \\ \hline 0\ 0\ 0\ 1\ 1\ 0\ 1 \end{array}$$

$$64 + 32 + 8 + 4 + 1 = 109_{10}$$

2. $11000010_2 = \boxed{194_{10}}$

$$\begin{array}{r} 1\ 1\ 0\ 0\ 0\ 1\ 0 \\ \hline 128\ 64\ 32\ 16\ 8\ 4\ 2 \\ \hline 1\ 0\ 0\ 0\ 1\ 0 \end{array}$$

$$128 + 64 + 2 = 194_{10}$$

3. $10101010_2 = \boxed{170_{10}}$

$$\begin{array}{r} 1\ 0\ 1\ 0\ 1\ 0 \\ \hline 128\ 64\ 32\ 16\ 8\ 4\ 2 \\ \hline 1\ 0\ 1\ 0\ 1\ 0 \end{array}$$

$$128 + 32 + 8 + 2 = 170_{10}$$

4. $00010111_2 = \boxed{23_{10}}$

$$\begin{array}{r} 0\ 0\ 1\ 0\ 1\ 1 \\ \hline 128\ 64\ 32\ 16\ 8\ 4\ 2 \\ \hline 0\ 0\ 1\ 0\ 1\ 1 \end{array}$$

$$16 + 4 + 2 + 1 = 23$$

5. $10000101_2 = \boxed{133_{10}}$

$$\begin{array}{r} 1\ 0\ 0\ 0\ 0\ 1\ 0 \\ \hline 128\ 64\ 32\ 16\ 8\ 4\ 2 \\ \hline 1\ 0\ 0\ 0\ 0\ 1\ 0 \end{array}$$

$$128 + 4 + 1 = 133_{10}$$