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8, 9, A, B, C, D, E, F

178₁₀

C=12 -1.375

1) $91_{10} + C6_{16}$

0110

$01011011 + 10001101_2 = C6_{16}$

$$\begin{array}{r} 11000110 \\ + 01011011 \\ \hline 100100001_2 \\ \boxed{289_{10}} \end{array}$$

$9 - 11 = -2$

2) $11_8 - 11_{10}$

$001001_2 - 001011_2$

$$\begin{array}{r} 001001 \\ 010101 \\ + 110101 \\ \hline 111110_{16} \\ \boxed{-2_{10}} \end{array}$$

27

5) $9_{10} \cdot 3_{10}$

$$\begin{array}{r} 1001_2 \cdot 0011_2 \\ \hline 1001 \\ 10010 \\ 000000 \\ 000000 \\ \hline 0011011_2 \\ \boxed{27_{10}} \end{array}$$

2's complement
first digit is
negative, add
a rest to get
number

110
 111111
 -2

3) $12.3125_{10} + 0110_{16}$

$$\begin{array}{r} 001100.0101 + 01.10 \\ \hline 001100.0101 \\ + 000001.1000 \\ \hline 001101.1101 \\ \boxed{13.9125_{10}} \end{array}$$

6) $-5_{10} \cdot -6_{16}$

$$\begin{array}{r} 1011 \\ \times 1010 \\ \hline 0000 \\ 110110 \\ 000000 \\ 1011000 \\ \hline 01101110 \\ \times 0101 \cdot 0110 \\ \times 1011 \cdot 1010 \\ \hline 11110111 \cdot 11111010_{18} \end{array}$$

||||0||| ||||10|0
I₈ I₈

[illegible]

$$\begin{array}{r}
 11111011_{I8} \\
 \times 11111010_{I8} \\
 \hline
 00000000 \\
 111110110 \\
 0000000000 \\
 11111011000 \\
 111110110000 \\
 1111101100000 \\
 11111011000000 \\
 111110110000000 \\
 \hline
 00011101101110_{I8}
 \end{array}$$

7) $9.5_{10} \cdot 2.625_{10}$
 24.9375_{10}

g) $-1.25_{10} \cdot 3.5_{10}$

1001, 100, 0010, 101_{u4Q3}

001,01 011,10_{I3Q2}
 ↓
 110,10_{I3Q2} 110,11

01001.1000 45Q4
00010.1010 45Q4

[illegible]

$$\begin{array}{r} 11001100 \\ 100000000 \\ 1100110000 \\ 0000000000 \\ 10011000000 \\ \hline 1100011120 \end{array}$$

~~11110.110 ± 5q3~~
~~00011.100 ± 5q3~~ → 00011.100 ± 5q3

I did more sign extension than was necessary in the math, but ISQ3 is the minimum required to get the answer, so I'm leaving it.