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6-11, 22, 34, 38

$$\begin{array}{r} 6. \quad \begin{array}{cccc} 1 & 1 & 1 & 0 \\ 1 & 0 & 0 & 1 \end{array} \\ + \quad \begin{array}{cccc} 1 & 1 & 0 & 0 \end{array} \\ \hline \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 1 \end{array} \end{array}$$

(A)

$$\begin{aligned} c. \quad 8 \cdot 12^2 &= 8 \cdot 144 = 1152 \\ 4 \cdot 12^1 &= 4 \cdot 12 = 48 \\ 1 \cdot 12^0 &= 1 \cdot 1 = 1 \end{aligned}$$

(1261)

$$\begin{array}{r} 7. \quad \begin{array}{cccc} 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 0 \end{array} \\ + \quad \begin{array}{cccc} 1 & 0 & 1 & 0 \end{array} \\ \hline \begin{array}{cccc} 1 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \end{array} \end{array}$$

(C)

$$\begin{aligned} d. \quad 8 \cdot 13^2 &= 8 \cdot 169 = 1352 \\ 9 \cdot 13^1 &= 9 \cdot 13 = 117 \\ 1 \cdot 13^0 &= 1 \cdot 1 = 1 \end{aligned}$$

(1470)

$$\begin{array}{r} 8. \quad \begin{array}{cccc} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{array} \\ + \quad \begin{array}{cccc} 1 & 1 & 1 & 1 \end{array} \\ \hline \begin{array}{cccc} 1 & 0 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{array} \end{array}$$

(B)

$$\begin{aligned} e. \quad 8 \cdot 16^2 &= 8 \cdot 256 = 2048 \\ 9 \cdot 16^1 &= 9 \cdot 16 = 144 \\ 1 \cdot 16^0 &= 1 \cdot 1 = 1 \end{aligned}$$

(2193)

$$\begin{array}{r} 9. \quad \begin{array}{cccc} 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 \end{array} \\ + \quad \begin{array}{cccc} 1 & 1 & 1 & 1 \end{array} \\ \hline \begin{array}{cccc} 1 & 1 & 1 & 1 \\ 1 & 0 & 0 & 0 \end{array} \end{array}$$

(F)

39 a / 066

$$\begin{array}{r} 10. \quad \begin{array}{cccc} 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 0 \end{array} \\ + \quad \begin{array}{cccc} 1 & 1 & 0 & 0 \end{array} \\ \hline \begin{array}{cccc} 1 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{array} \end{array}$$

(D)

$$\begin{array}{r} 16 \overline{) 1066} \\ \underline{- 96} \phantom{00} \\ 106 \phantom{00} \\ \underline{- 96} \phantom{00} \\ 10 \phantom{00} \\ \underline{- 8} \phantom{00} \\ 2 \phantom{00} \\ \underline{- 0} \phantom{00} \\ 2 \end{array}$$

(A24)

$$\begin{array}{r} 11. \quad \begin{array}{cccc} 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 0 \end{array} \\ + \quad \begin{array}{cccc} 1 & 0 & 1 & 0 \end{array} \\ \hline \begin{array}{cccc} 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 0 \end{array} \end{array}$$

(E)

22. a. 391 base 10

$$\begin{aligned} 8 \cdot 10^2 &= 8 \cdot 100 = 800 \\ 9 \cdot 10^1 &= 9 \cdot 10 = 90 \\ 1 \cdot 10^0 &= 1 \cdot 1 = 1 \end{aligned}$$

$$\begin{array}{r} 16 \overline{) 4} \\ \underline{- 0} \\ 4 \end{array}$$

(391)

b. 391 base 8

$$\begin{aligned} 8 \cdot 8^2 &= 8 \cdot 64 = 512 \\ 9 \cdot 8^1 &= 9 \cdot 8 = 72 \\ 1 \cdot 8^0 &= 1 \cdot 1 = 1 \end{aligned}$$

$$\begin{array}{r} 16 \overline{) 589} \\ \underline{- 512} \\ 77 \\ \underline{- 72} \\ 5 \end{array}$$

(589)