

(e) $(231.78)_{10} = (?)_5$

$$\begin{array}{r} 3 \overline{) 231} \\ 3 \overline{) 77} \\ 3 \overline{) 25} \\ 3 \overline{) 8} \\ 0 \overline{) 2} \\ 0 \end{array} \quad \begin{array}{l} 0 \uparrow \\ 2 \\ 2 \\ 1 \\ 2 \\ 2 \end{array}$$

$$\begin{array}{r} .78 \\ \times 3 \\ \hline 2.34 \\ \times 3 \\ \hline 1.02 \\ \times 3 \\ \hline 0.06 \\ \times 3 \\ \hline 0.18 \end{array}$$

$= (22120.2100\dots)_5$

(f) $(1023.25)_{10} = (?)_5$

$$\begin{array}{r} 3 \overline{) 1023} \\ 3 \overline{) 341} \\ 3 \overline{) 113} \\ 3 \overline{) 37} \\ 3 \overline{) 12} \\ 3 \overline{) 4} \\ 0 \overline{) 1} \\ 0 \end{array} \quad \begin{array}{l} 0 \uparrow \\ 2 \\ 2 \\ 2 \\ 1 \\ 0 \\ 1 \\ 1 \end{array}$$

$$\begin{array}{r} .25 \\ \times 3 \\ \hline 0.75 \\ \times 3 \\ \hline 2.25 \end{array}$$

*repeats

$= (1101220.\overline{02})_5$

(2) Base 5
(a) $(245)_{10} = (?)_5$

$$\begin{array}{r} 5 \overline{) 245} \\ 5 \overline{) 49} \\ 5 \overline{) 9} \\ 5 \overline{) 1} \\ 0 \end{array} \quad \begin{array}{l} 0 \uparrow \\ 4 \\ 4 \\ 1 \\ 1 \end{array}$$

$= (1440)_5$

(b) $(461)_{10} = (?)_5$

$$\begin{array}{r} 5 \overline{) 461} \\ 5 \overline{) 92} \\ 5 \overline{) 18} \\ 5 \overline{) 3} \\ 0 \end{array} \quad \begin{array}{l} 1 \uparrow \\ 2 \\ 3 \\ 3 \end{array}$$

$= (3321)_5$

(c) $(76.5)_{10} = (?)_5$

$$\begin{array}{r} 5 \overline{) 76} \\ 5 \overline{) 15} \\ 5 \overline{) 0} \end{array} \quad \begin{array}{l} 1 \uparrow \\ 0 \\ 3 \end{array}$$

$$\begin{array}{r} .5 \\ \times 5 \\ \hline 2.5 \end{array}$$

*repeats

$= (301.\overline{2})_5$

(d) $(46.45)_{10} = (?)_5$

$$\begin{array}{r} 5 \overline{) 46} \\ 5 \overline{) 19} \\ 5 \overline{) 4} \\ 0 \overline{) 1} \\ 0 \end{array} \quad \begin{array}{l} 1 \uparrow \\ 4 \\ 1 \\ 1 \end{array}$$

$$\begin{array}{r} .45 \\ \times 5 \\ \hline 2.25 \\ \times 5 \\ \hline 1.25 \end{array}$$

*repeats

$= (141.2\overline{1})_5$

(e) $(231.78)_{10} = (?)_5$

$$\begin{array}{r} 5 \overline{) 231} \\ 5 \overline{) 46} \\ 5 \overline{) 19} \\ 5 \overline{) 1} \\ 0 \end{array} \quad \begin{array}{l} 1 \uparrow \\ 1 \\ 1 \\ 4 \\ 1 \end{array}$$

$$\begin{array}{r} .78 \\ \times 5 \\ \hline 3.90 \\ \times 5 \\ \hline 4.50 \\ \times 5 \\ \hline 2.50 \end{array}$$

*repeats

$= (1411.34\overline{2})_5$

(f) $(1023.25)_{10} = (?)_5$

$$\begin{array}{r} 5 \overline{) 1023} \\ 5 \overline{) 204} \\ 5 \overline{) 40} \\ 5 \overline{) 8} \\ 5 \overline{) 1} \\ 0 \end{array} \quad \begin{array}{l} 3 \uparrow \\ 4 \\ 0 \\ 3 \\ 1 \end{array}$$

$$\begin{array}{r} .25 \\ \times 5 \\ \hline 1.25 \end{array}$$

*repeats

$= (13043.\overline{1})_5$

(3) Base 8
(a) $(245)_{10} = (?)_8$

$$\begin{array}{r} 8 \overline{) 245} \\ 8 \overline{) 30} \\ 8 \overline{) 12} \\ 0 \end{array} \quad \begin{array}{l} 5 \uparrow \\ 6 \\ 3 \end{array}$$

$= (365)_8$

(b) $(461)_{10} = (?)_8$

$$\begin{array}{r} 8 \overline{) 461} \\ 8 \overline{) 57} \\ 8 \overline{) 17} \\ 0 \end{array} \quad \begin{array}{l} 5 \uparrow \\ 1 \\ 7 \end{array}$$

$= (715)_8$