Exercise 3D

Q5

Answer:

(i) 740 × 105
= 740 × (100 + 5)
= 740 × 100 + 740 × 5   (Using distributive law of multiplication over addition)
= 74000 + 3700
= 77700

(ii) 245 × 1008
= 245 × (1000 + 8)
= 245 × 1000 + 245 × 8   (Using distributive law of multiplication over addition)
= 245000 + 1960
= 246960

(iii) 947 × 96
= 947 × (100 − 4)
= 947 × 100 − 947 × 4   (Using distributive law of multiplication over subtraction)
= 94700 − 3788
= 90912

(iv) 996 × 367
= 367 × (1000 − 4)
= 367 × 1000 − 367 × 4   (Using distributive law of multiplication over subtraction)
= 367000 × 1468
= 365532

Q6

Answer:

Distributive property of multiplication over addition states that $a(b + c) = ab + ac$
Distributive property of multiplication over subtraction states that $a(b − c) = ab - ac$

(i) 3576 × 9
= 3576 × (10 − 1)
= 3576 × 10 − 3576 × 1
= 35760 − 3576
= 32184

(ii) 847 × 99
= 847 × (100 − 1)
= 847 × 100 − 847 × 1
= 84700 − 847
= 83853

(iii) 2437 × 999
= 2437 × (1000 − 1)
= 2437 × 1000 − 2437 × 1
= 2437000 − 2437
= 2434563

Q7

Answer:

(i)

4 5 6

$$\begin{array}{r} \times\ 6\ 7 \\ \hline 3\ 2\ 0\ 6 \\ 2\ 7\ 4\ 8\ 0 \\ \hline 3\ 0\ 6\ 8\ 6 \\ \hline \end{array}$$ Multiplication by 7
Multiplication by 60

458 × 67 = 30686

(ii)

$$\begin{array}{r} 3\ 7\ 0\ 9 \\ \times\ 8\ 9 \\ \hline 3\ 3\ 3\ 8\ 1 \\ 2\ 9\ 6\ 7\ 2\ 0 \\ \hline 3\ 3\ 0\ 1\ 0\ 1 \\ \hline \end{array}$$ Multiplication by 9
Multiplication by 80

3709 × 89 = 330101

(iii)

$$\begin{array}{r} 4\ 6\ 1\ 7 \\ \times\ 2\ 3\ 4 \\ \hline 1\ 8\ 4\ 6\ 8 \\ 1\ 3\ 8\ 5\ 1\ 0 \\ 9\ 2\ 3\ 4\ 0\ 0 \\ \hline 1\ 0\ 8\ 0\ 3\ 7\ 8 \\ \hline \end{array}$$ Multiplication by 4
Multiplication by 30
Multiplication by 200

4617 × 234 = 1080378

(iv)

$$\begin{array}{r} 1\ 5\ 2\ 0\ 8 \\ \times\ 5\ 4\ 2 \\ \hline 3\ 0\ 4\ 1\ 6 \\ 6\ 0\ 8\ 3\ 2\ 0 \\ 7\ 6\ 0\ 4\ 0\ 0\ 0 \\ \end{array}$$ Multiplication by 2
Multiplication by 40
Multiplication by 500

8242736

$15208 \times 542 = 8242736$

Q8

Answer :

Largest three-digit number = 999

Largest five-digit number = 99999

∴ Product of the two numbers = 999 × 99999

= 999 × (100000 − 1)   (Using distributive law)

= 99900000 − 999

= 99899001

********** END *********