

Algebraic Expressions and Identities Ex 6.7 Q2

Answer:

 994×1006

 $=(1000-6)\times(1000+6)$

```
(i) Here, we will use the identity (x+a)(x+b) = x^2 + (a+b)x + ab
102 \times 106
=(100+2)(100+6)
=100^2+(2+6)100+2\times 6
=10000+800+12
=10812
(ii) Here, we will use the identity (x+a)(x+b)=x^2+(a+b)x+ab
109 \times 107
=(100+9)(100+7)
=100^2+(9+7)100+9\times7
=10000+1600+63
=11663
(iii) Here, we will use the identity (x+a)(x+b)=x^2+(a+b)x+ab
35 \times 37
=(30+5)(30+7)
=30^2+(5+7)30+5\times7
=900+360+35
=1295
(iv) Here, we will use the identity (x+a)(x+b) = x^2 + (a+b)x + ab
53 \times 55
=(50+3)(50+5)
=50^2+(3+5)50+3\times5
=2500+400+15
= 2915
(v) Here, we will use the identity (x+a)(x-b) = x^2 + (a-b)x - ab
103 \times 96
=(100+3)(100-4)
=100^2+(3-4)100-3\times4
=10000-100-12
(vi) Here, we will use the identity (x+a)(x+b) = x^2 + (a+b)x + ab
34 \times 36
=(30+4)(30+6)
=30^2+(4+6)30+4\times6
=900+300+24
=1224
(vii) Here, we will use the identity (x-a)(x+b) = x^2 + (b-a)x - ab
```

$$= 1000^{2} + (6 - 6) \times 1000 - 6 \times 6$$
$$= 1000000 - 36$$
$$= 999964$$

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