

## Math Shortcuts

### Multiplication Shortcut 1:

$$(a + b) \times (a + c) = a^2 + ac + ab + bc$$

How do you multiply 101 by 103 with the above technique ?

$$101 \times 103 = (100 + 1) \times (100 + 3)$$

$$(100 \times 103) = (100 \times 100) + (100 \times 3) + (100 \times 1) + (1 \times 3)$$

$$(100 \times 103) = 10000 + 300 + 100 + 3$$

$$(100 \times 103) = 10403$$