

1 解答 (1) 2496 (2) 2601 (3) 160 (4) 2000

$$(1) 52 \times 48 = (50 + 2)(50 - 2)$$

$$= 50^2 - 2^2$$

$$= 2500 - 4$$

$$= 2496$$

$$(2) 51^2 = (50 + 1)^2$$

$$= 50^2 + 2 \times 1 \times 50 + 1^2$$

$$= 2500 + 100 + 1$$

$$= 2601$$

$$(3) 22^2 - 18^2 = (22 + 18)(22 - 18)$$

$$= 40 \times 4$$

$$= 160$$

$$(4) 105^2 - 95^2 = (105 + 95)(105 - 95)$$

$$= 200 \times 10$$

$$= 2000$$

2 解答 (1) 10609 (2) 9409 (3) 996004 (4) 6200 (5) 17400

(6) 18800 (7) 9936 (8) 999991

$$(1) 103^2 = (100 + 3)^2$$

$$= 100^2 + 2 \times 100 \times 3 + 3^2$$

$$= 10000 + 600 + 9$$

$$= 10609$$

$$(2) 97^2 = (100 - 3)^2$$

$$= 100^2 - 2 \times 100 \times 3 + 3^2$$

$$= 10000 - 600 + 9$$

$$= 9409$$

$$(3) 998^2 = (1000 - 2)^2$$

$$= 1000^2 - 2 \times 1000 \times 2 + 2^2$$

$$= 1000000 - 4000 + 4$$

$$= 996004$$

$$(4) 81^2 - 19^2 = (81 + 19)(81 - 19)$$

$$= 100 \times 62$$

$$= 6200$$

$$(5) 137^2 - 37^2 = (137 + 37)(137 - 37)$$

$$= 174 \times 100$$

$$= 17400$$

$$(6) 147^2 - 53^2 = (147 + 53)(147 - 53)$$

$$= 200 \times 94$$

$$= 18800$$

$$(7) 108 \times 92 = (100 + 8)(100 - 8)$$

$$= 100^2 - 8^2$$

$$= 10000 - 64$$

$$= 9936$$

$$(8) 997 \times 1003 = (1000 - 3)(1000 + 3)$$

$$= 1000^2 - 3^2$$

$$= 1000000 - 9$$

$$= 999991$$

3 解答 (1) 50 (2) 2496 (3) 199 (4) 2601 (5) 9604

$$(1) 25^2 - 25 \times 23 = 25 \times (25 - 23)$$

$$= 25 \times 2$$

$$= 50$$

$$(2) 48 \times 52 = (50 - 2)(50 + 2)$$

$$= 50^2 - 2^2$$

$$= 2500 - 4$$

$$= 2496$$

$$(3) 100^2 - 99^2 = (100 + 99)(100 - 99)$$

$$= 199 \times 1$$

$$= 199$$

$$(4) 51^2 = (50 + 1)^2$$

$$= 50^2 + 2 \times 1 \times 50 + 1^2$$

$$= 2500 + 100 + 1$$

$$= 2601$$

$$(5) 98^2 = (100 - 2)^2$$

$$= 100^2 - 2 \times 2 \times 100 + 2^2$$

$$= 10000 - 400 + 4$$

$$= 9604$$

4 解答 (1) 4 (2) -9 (3) 12 (4) 7

$$(1) 2083^2 - 2081 \times 2085 = 2083^2 - (2083 - 2) \times (2083 + 2)$$

$$= 2083^2 - (2083^2 - 2^2)$$

$$= 2^2$$

$$= 4$$

$$(2) 5718 \times 5712 - 5715^2 = (5715 + 3) \times (5715 - 3) - 5715^2$$

$$= (5715^2 - 3^2) - 5715^2$$

$$= -3^2$$

$$= -9$$

$$(3) 3916 \times 3912 - 3910 \times 3918 = (3914 + 2) \times (3914 - 2) - (3914 - 4) \times (3914 + 4)$$

$$= (3914^2 - 2^2) - (3914^2 - 4^2)$$

$$= -2^2 + 4^2$$

$$= 12$$

$$(4) 4839 \times 4833 - 4840 \times 4832 = (4836 + 3) \times (4836 - 3) - (4836 + 4) \times (4836 - 4)$$

$$= (4836^2 - 3^2) - (4836^2 - 4^2)$$

$$= -3^2 + 4^2$$

$$= 7$$