

$$a \times b + b \times c + c \times d + d \times a$$

$$= b \times (a + c) + d \times (a + c)$$

$$= (b + d) \times (a + c)$$

$$= (a + 1 + a + 3) \times (a + a + 2)$$

$$= (2 \times a + 4) \times (2 \times a + 2)$$

$$= 2400 = 50 \times 48$$

$$\text{より } 2 \times a + 4 = 50 \quad a = 23$$

(答え) 23