

1. $1^2 - 3^2 + 5^2 - 7^2 + 9^2 - 11^2$ 의 값을 구하여라.

▶ 답 :

▷ 정답 : -72

해설

$$\begin{aligned} & (1-3)(1+3) + (5-7)(5+7) + (9-11)(9+11) \\ &= -2(1+3+5+7+9+11) \\ &= -2 \times 36 \\ &= -72 \end{aligned}$$

2. $a + b = 2$, $a^2 - b^2 = 10$ 일 때, $a - b$ 의 값을 구하여라.

▶ 답 :

▷ 정답 : $a - b = 5$

해설

$$\begin{aligned} a^2 - b^2 &= (a + b)(a - b) = 2 \times (a - b) = 10 \\ \therefore a - b &= 5 \end{aligned}$$

3. $x^2 - 9y^2 - 2x + 18y - 8$ 을 인수분해하면?

- ① $(x - 3y + 2)(x + 3y + 4)$ ② $(x - 3y + 2)(x + 3y - 4)$
③ $(x + 3y + 2)(x + 3y - 4)$ ④ $(x - 5y + 2)(x + 3y - 4)$
⑤ $(x - 3y + 4)(x + 3y - 2)$

해설

$$\begin{aligned} & x^2 - 9y^2 - 2x + 18y - 8 \\ &= x^2 - 2x - 9y^2 + 18y - 8 \\ &= x^2 - 2x - (9y^2 - 18y + 8) \\ &= x^2 - 2x - (3y - 2)(3y - 4) \\ &= \{x - (3y - 2)\} \{x + (3y - 4)\} \\ &= (x - 3y + 2)(x + 3y - 4) \end{aligned}$$