

1. $a - b = 2\sqrt{3}$ 일 때, $a^2 + b^2 - 2ab - 3(a - b) - 12$ 의 값은?

㉠ $-6\sqrt{3}$

㉡ $1 - 6\sqrt{3}$

㉢ $2 - 6\sqrt{3}$

㉣ $3 - 6\sqrt{3}$

㉤ $4 - 6\sqrt{3}$

해설

$$\begin{aligned}(\text{준식}) &= (a - b)^2 - 3(a - b) - 12 \\&= (2\sqrt{3})^2 - 3 \times 2\sqrt{3} - 12 \\&= 12 - 6\sqrt{3} - 12 = -6\sqrt{3}\end{aligned}$$

2. $(x - 3y)^2 - 2x + 6y + 1$ 를 인수분해하면?

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

해설

$$\begin{aligned}(\text{준식}) &= (x - 3y)^2 - 2(x - 3y) + 1 \\ x - 3y &= A \text{ 로 치환하면} \\ (\text{준식}) &= A^2 - 2A + 1 \\ &= (A - 1)^2 = (x - 3y - 1)^2\end{aligned}$$

3. $(x + y + 4)(x - y + 4) - 16x$ 를 바르게 인수분해한 것은?

① $(x - y + 4)$

② $(x + y - 4)^2$

③ $(x - y - 2)(x + y + 8)$

④ $(x + y - 4)(x - y - 4)$

⑤ $(-x - y + 4)(x - y + 4)$

해설

$$\begin{aligned}x + 4 &= t \text{ 라 하면} \\(t + y)(t - y) - 16x \\&= t^2 - y^2 - 16x \\&= (x + 4)^2 - 16x - y^2 \\&= (x^2 + 8x + 16 - 16x) - y^2 \\&= (x^2 - 8x + 16) - y^2 \\&= (x - 4)^2 - y^2 \\&= (x + y - 4)(x - y - 4)\end{aligned}$$