1. 다음 중 제곱근의 값을 구할 때, $\sqrt{133.606}$ 임을 이용하여 구할 수 <u>없는</u> 것은?

① $\sqrt{0.052}$ ② $\sqrt{130000}$ ③ $\sqrt{0.0013}$

④ $\sqrt{5200}$ ⑤ $\sqrt{0.13}$

해설

② $\sqrt{130000} = \sqrt{13 \times 10000} = 100\sqrt{13} = 360.6$

③ $\sqrt{0.0013} = \sqrt{\dfrac{13}{10000}} = \dfrac{\sqrt{13}}{100} = 0.03606$

④ $\sqrt{5200} = \sqrt{400 \times 13} = 20\sqrt{13} = 72.12$

⑤ $\sqrt{0.13} = \sqrt{\dfrac{13}{100}} = \dfrac{\sqrt{13}}{10} = 0.3606$

2. 주어진 식을 인수분해했을 때, 빈 칸에 들어갈 값이 다른 것은?

① $3x^2+18x+27=3(x+\square)^2$

② $9x^2-24x+16=(\square x-4)^2$

③ $2x^2-72=2(x+6)(x-2\times\square)$

④ $6x^2-17x+12=(2x-\square)(3x-4)$

⑤ $x^2-20x+91=(x-7)(x-\square)$

해설

① $3(x^2+6x+9)=3(x+3)^2$

$\therefore \square=3$

② $(3x-4)^2$

$\therefore \square=3$

③ $2(x^2-36)=2(x+6)(x-6)$

$2\times\square=6, \quad \therefore \square=3$

④ $(2x-3)(3x-4)$

$\therefore \square=3$

⑤ $(x-7)(x-13)$

$\therefore \square=13$

3. $a-b=\sqrt{3}+2$ 일 때, $a^2+b^2-2ab-4a+4b+4$ 의 값은?

① 1 ② 2 ③ 3 ④ 4 ⑤ 5

해설

$$\begin{aligned}(\text{준식}) &= (a-b)^2-4(a-b)+4 \\ &= \{(a-b)^2-2\}^2 \\ &= \left\{\left(\sqrt{3}+2\right)-2\right\} \\ &= 3\end{aligned}$$