1. $\frac{1}{\sqrt{2}} - \frac{3}{\sqrt{32}}$ 을 계산하면?

① $\frac{1}{2}$ ② $-\frac{1}{2}$ ③ $\frac{\sqrt{2}}{8}$ ④ $-\frac{\sqrt{3}}{8}$ ⑤ $\frac{\sqrt{3}}{8}$

해설

$$\frac{1}{\sqrt{2}} - \frac{3}{4\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{2}\sqrt{2}} - \frac{3\sqrt{2}}{4\sqrt{2}\sqrt{2}}$$
$$= \frac{\sqrt{2}}{2} - \frac{3\sqrt{2}}{8}$$
$$= \frac{4\sqrt{2}}{8} - \frac{3\sqrt{2}}{8}$$
$$= \frac{\sqrt{2}}{8}$$

2. $\sqrt{2}=a,\ \sqrt{3}=b,\ \sqrt{5}=c$ 일 때,
$\sqrt{360}=6(\quad\quad)$로 나타낼 때, $(\quad\quad)$에 들어갈 것은?

① ac ② $\sqrt{a}\sqrt{c}$ ③ $\sqrt{b}\sqrt{c}$

④ bc ⑤ abc

해설

$\sqrt{360}=\sqrt{3^2\times 2^3\times 5}=6\sqrt{2}\sqrt{5}=6ac$

3. $\sqrt{2}=x,\ \sqrt{3}=y$ 일 때, $\sqrt{5}$ 를 x 와 y 로 나타낸 것으로 옳은 것은?

① $x+y$ ② x^2+y^2 ③ $\sqrt{x+y}$

④ $\sqrt{x^2+y^2}$ ⑤ $\sqrt{xy}$

해설

$$\sqrt{5}=\sqrt{2+3}=\sqrt{\left(\sqrt{2}\right)^2+\left(\sqrt{3}\right)^2}=\sqrt{x^2+y^2}$$

4. $\sqrt{(-5)^2} - (-3\sqrt{2})^2 + \sqrt{3}\left(\sqrt{48} + \sqrt{\frac{1}{3}}\right)$ 을 간단히 하면?

① 0 ② 1 ③ 2 ④ 3 ⑤ 5

해설

$$5 - 18 + \sqrt{3}\left(4\sqrt{3} + \frac{1}{\sqrt{3}}\right) = -13 + (12 + 1) = 0$$

5. $\sqrt{3}=a$, $\sqrt{5}=b$ 일 때, $\sqrt{0.008}+\sqrt{300}$ 을 a, b 를 이용하여 나타내면?

① $5a+\frac{1}{10}b$ ② $5a+\frac{1}{20}b$ ③ $10a+\frac{1}{15}b$

④ $10a+\frac{1}{25}b$ ⑤ $15a+\frac{1}{20}b$

해설

$$\sqrt{0.008}=\sqrt{\frac{80}{10000}}=\frac{\sqrt{80}}{100}$$

$$=\frac{\sqrt{2^4\times 5}}{100}=\frac{4\sqrt{5}}{100}=\frac{1}{25}b$$

$$\sqrt{300}=\sqrt{3\times 100}=10\sqrt{3}=10a$$

$$\therefore\ \sqrt{0.008}+\sqrt{300}=10a+\frac{1}{25}b$$