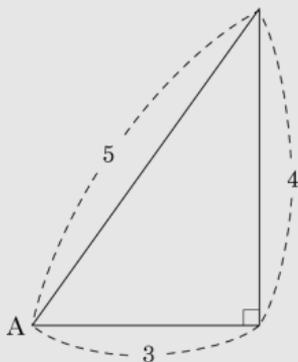


1. $\cos A = \frac{3}{5}$ 일 때, $\sin A + \tan A$ 의 값을 구하여라. (단, $\angle A$ 는 예각)

▶ 답:

▷ 정답: $\frac{32}{15}$

해설



$$\sin A + \tan A = \frac{4}{5} + \frac{4}{3} = \frac{32}{15}$$

2. $\cos 60^\circ \times \tan 60^\circ + \sin 60^\circ$ 을 계산하면?

① $\sqrt{2}$

② $\sqrt{3}$

③ 2

④ $2\sqrt{2}$

⑤ $2\sqrt{3}$

해설

$$(\text{준식}) = \frac{1}{2} \times \sqrt{3} + \frac{\sqrt{3}}{2} = \sqrt{3}$$

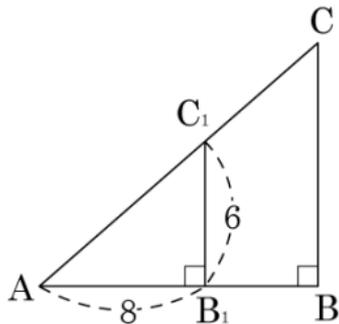
3.

다음 그림에서 $\frac{\overline{BC}}{\overline{AC}} + \frac{\overline{AB}}{\overline{AC}}$ 의 값은?

① $\frac{3}{4}$
④ $\frac{6}{5}$

② $\frac{4}{3}$
⑤ $\frac{7}{5}$

③ $\frac{4}{5}$



해설

$$\triangle AB_1C_1 \text{ 에서 } \overline{AC_1} = \sqrt{8^2 + 6^2} = 10$$

$$\triangle AB_1C_1 \sim \triangle ABC \quad (\because \text{AA 답음})$$

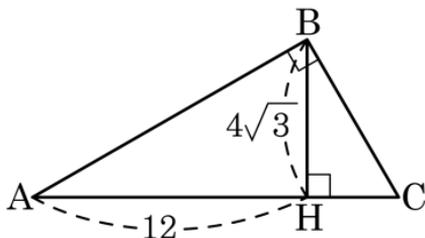
$$\frac{\overline{BC}}{\overline{AC}} = \frac{\overline{B_1C_1}}{\overline{AC_1}} = \frac{6}{10} = \frac{3}{5}$$

$$\frac{\overline{AB}}{\overline{AC}} = \frac{\overline{AB_1}}{\overline{AC_1}} = \frac{8}{10} = \frac{4}{5}$$

$$\therefore \left(\frac{3}{5} + \frac{4}{5} \right) = \frac{7}{5}$$

4. 다음 그림에서 $\cos A = \frac{\sqrt{3}}{2}$ 이고,

$\overline{AH} = 12$, $\overline{BH} = 4\sqrt{3}$ 일 때, \overline{AC} 의 길이는?



① 10

② 12

③ 14

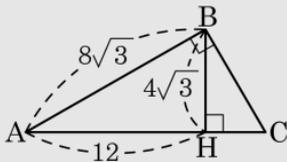
④ 16

⑤ 18

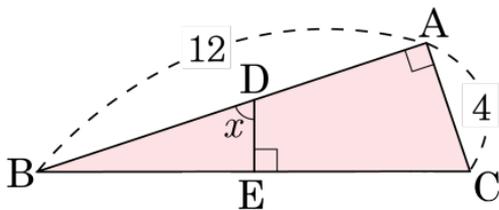
해설

$$\cos A = \frac{\overline{AB}}{\overline{AC}} = \frac{8\sqrt{3}}{\overline{AC}} = \frac{\sqrt{3}}{2}$$

$$\therefore \overline{AC} = 16$$



5. 다음 그림과 같은 $\triangle ABC$ 에서 $\sin x \times \cos x \times \tan x$ 의 값을 구하여라.



▶ 답 :

▶ 정답 : $\frac{9}{10}$

해설

$\triangle DBE \sim \triangle CBA$ (AA 닮음)

$$\therefore \angle C = x$$

$$\overline{BC} = \sqrt{12^2 + 4^2} = \sqrt{160} = 4\sqrt{10}$$

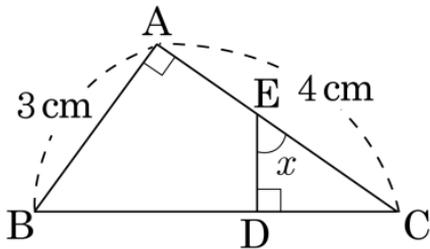
$$\sin x = \frac{\overline{AB}}{\overline{BC}} = \frac{12}{4\sqrt{10}} = \frac{3}{\sqrt{10}}$$

$$\cos x = \frac{\overline{AC}}{\overline{BC}} = \frac{4}{4\sqrt{10}} = \frac{1}{\sqrt{10}}$$

$$\tan x = \frac{\overline{AB}}{\overline{AC}} = \frac{12}{4} = 3$$

$$\therefore \sin x \times \cos x \times \tan x = \frac{9}{10}$$

6. 다음 그림에서 $\sin x$ 의 값은?



① $\frac{4}{5}$

② $\frac{5}{3}$

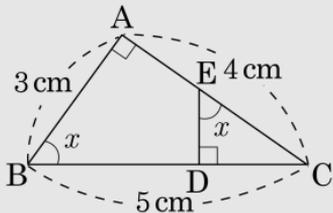
③ $\frac{1}{4}$

④ $\frac{1}{2}$

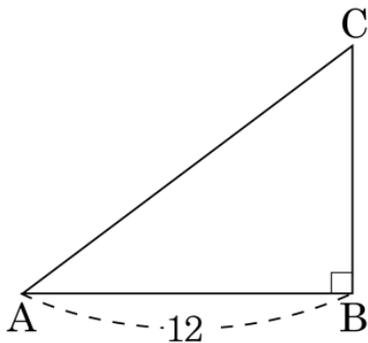
⑤ $\frac{3}{5}$

해설

$$\sin x = \frac{4}{5}$$



7. 다음 그림과 같이 $\angle B = 90^\circ$ 인 직각삼각형 ABC 에서 $\overline{AB} = 12$, $\tan A = \frac{3}{4}$ 일 때, $\cos A + \cos C$ 의 값은?



① $\frac{5}{12}$

② $\frac{7}{12}$

③ $\frac{3}{5}$

④ $\frac{4}{5}$

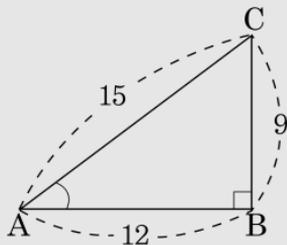
⑤ $\frac{7}{5}$

해설

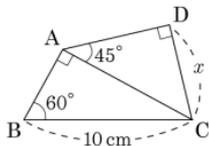
$$\tan A = \frac{\overline{BC}}{\overline{AB}} = \frac{3}{4}, \overline{BC} = 9$$

$$\overline{AC} = \sqrt{12^2 + 9^2} = \sqrt{225} = 15$$

$$\therefore \cos A + \cos C = \frac{12}{15} + \frac{9}{15} = \frac{21}{15} = \frac{7}{5}$$



8. 다음 그림에서 선분 DC 의 길이는? (단, $\angle B = 60^\circ$, $\angle DAC = 45^\circ$, $\overline{BC} = 10\text{cm}$)



① $\frac{5\sqrt{3}}{2}$ cm

② $\frac{5\sqrt{6}}{2}$ cm

③ $\frac{5\sqrt{2}}{3}$ cm

④ $\frac{5\sqrt{3}}{3}$ cm

⑤ $\frac{5\sqrt{6}}{3}$ cm

해설

$$\sin 60^\circ = \frac{\overline{AC}}{10}$$

$$\therefore \overline{AC} = 10 \times \frac{\sqrt{3}}{2} = 5\sqrt{3} \text{ (cm)}$$

$$\sin 45^\circ = \frac{x}{\overline{AC}}, \quad \frac{\sqrt{2}}{2} = \frac{x}{5\sqrt{3}}$$

$$\therefore x = 5\sqrt{3} \times \frac{\sqrt{2}}{2} = \frac{5\sqrt{6}}{2} \text{ (cm)}$$

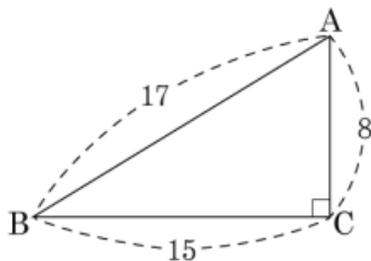
9. $\cos 60^\circ \times \tan 45^\circ \div \sin 60^\circ$ 을 계산하면?

- ① $\sqrt{6}$ ② $\frac{\sqrt{6}}{2}$ ③ $\frac{\sqrt{6}}{4}$ ④ $\frac{\sqrt{3}}{3}$ ⑤ $\frac{\sqrt{6}}{8}$

해설

$$\cos 60^\circ \times \tan 45^\circ \div \sin 60^\circ = \frac{1}{2} \times 1 \div \frac{\sqrt{3}}{2} = \frac{\sqrt{3}}{3}$$

10. 다음 중 $\cos A$ 와 값이 같은 삼각비는?



① $\sin A$

② $\sin B$

③ $\cos B$

④ $\tan A$

⑤ $\tan B$

해설

$\sin B = \frac{8}{17}$, $\cos A = \frac{8}{17}$ 이므로, $\sin B = \cos A$ 이다.