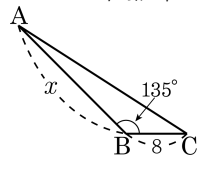
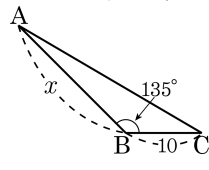


1. 다음 $\triangle ABC$ 에서 x 의 길이를 구하여라.

(1) $\triangle ABC$ 의 넓이 : $40\sqrt{2}$



(2) $\triangle ABC$ 의 넓이 : $30\sqrt{2}$



▶ 답 :

▶ 답 :

▷ 정답 : (1) 20

▷ 정답 : (2) 16

해설

(1) $\frac{1}{2} \times 8 \times x \times \sin(180^\circ - 135^\circ) = 40\sqrt{2}$

$$4x \times \sin 45^\circ = 40\sqrt{2}$$

$$4x \times \frac{\sqrt{2}}{2} = 40\sqrt{2}$$

$$4x = 80$$

$$\therefore x = 20$$

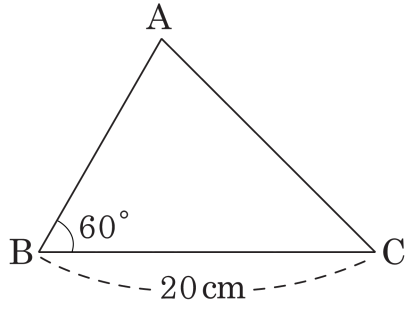
(2) $\frac{1}{2} \times 10 \times x \times \sin(180^\circ - 135^\circ) = 30\sqrt{2}$

$$5x \times \sin 45^\circ = 30\sqrt{2}$$

$$5x \times \frac{\sqrt{2}}{2} = 30\sqrt{2}$$

$$\therefore x = 16$$

2. 다음 그림과 같은 $\triangle ABC$ 의 넓이가 $80\sqrt{3}\text{cm}^2$ 일 때, $\overline{AC}$ 의 길이를 구하여라.



▶ 답 : cm

▷ 정답 : $4\sqrt{21}$ cm

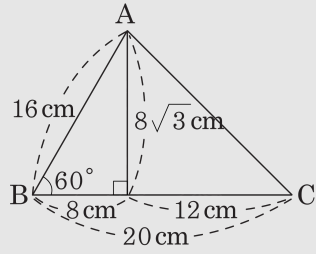
해설

$$\triangle ABC = \frac{1}{2} \times \overline{AB} \times \overline{BC} \times \sin 60^\circ = 80\sqrt{3}$$

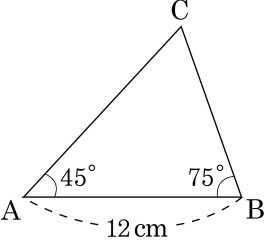
$$\frac{1}{2} \times \overline{AB} \times 20 \times \frac{\sqrt{3}}{2} = 80\sqrt{3}$$

$$\overline{AB} = \frac{80\sqrt{3}}{5\sqrt{3}} = 16 \text{ (cm)}$$

$$\begin{aligned}\overline{AC} &= \sqrt{(8\sqrt{3})^2 + 12^2} \\ &= \sqrt{192 + 144} = \sqrt{336} \\ &= 4\sqrt{21} \text{ (cm)}\end{aligned}$$



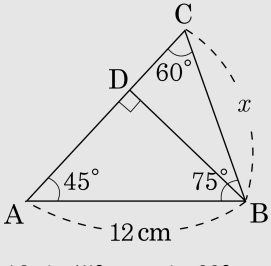
3. 다음 $\triangle ABC$ 에서 $\angle A = 45^\circ$, $\angle B = 75^\circ$, $\overline{AB} = 12\text{cm}$ 일 때, $\overline{BC}$ 의 길이를 구하여라.



▶ 답 : cm

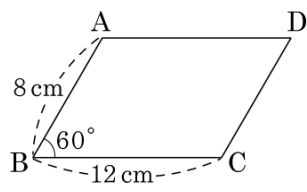
▷ 정답 : $4\sqrt{6}$ cm

해설



$$\begin{aligned}
 12 \sin 45^\circ &= x \sin 60^\circ \\
 12 \times \frac{\sqrt{2}}{2} &= x \times \frac{\sqrt{3}}{2}, 12 \sqrt{2} = \sqrt{3}x \\
 \therefore x &= \frac{12 \sqrt{2}}{\frac{\sqrt{3}}{2}} = \frac{12 \sqrt{6}}{3} \\
 &= 4 \sqrt{6}(\text{cm})
 \end{aligned}$$

4. 다음 평행사변형 ABCD 에서 $\overline{AB} = 8\text{cm}$, $\overline{BC} = 12\text{cm}$, $\angle B = 60^\circ$ 일 때, $\square ABCD$ 의 넓이를 구하여라.



▶ 답 : $\underline{\hspace{1cm}} \text{ cm}^2$

▷ 정답 : $48\sqrt{3} \text{ cm}^2$

해설

$$\begin{aligned} (\text{넓이}) &= 8 \times 12 \times \sin 60^\circ \\ &= 8 \times 12 \times \frac{\sqrt{3}}{2} = 48\sqrt{3} \text{ (cm}^2\text{)} \end{aligned}$$