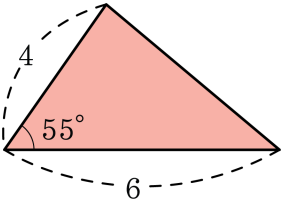
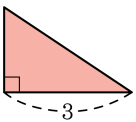
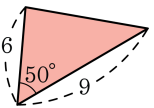
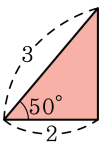
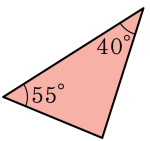
1. 다음 주어진 삼각형과 닮은 삼각형을 알맞게 짝지은 것은?

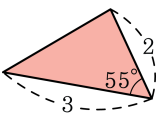


① 

② 

③ 

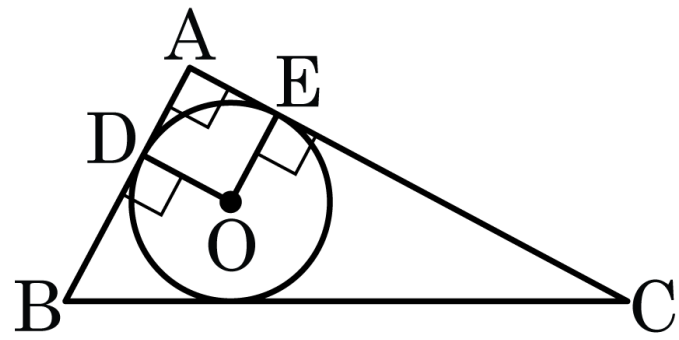
④ 

⑤ 

해설

⑤는 SAS 닮음이다.

2. $\triangle ABC$ 에서 점 O 는 내심이고 $\overline{AE}$ 의 길이가 3이다. $\triangle ABC = 48$ 일 때, 세 변의 길이의 합은?



① 16 ② 24 ③ 28 ④ 32 ⑤ 36

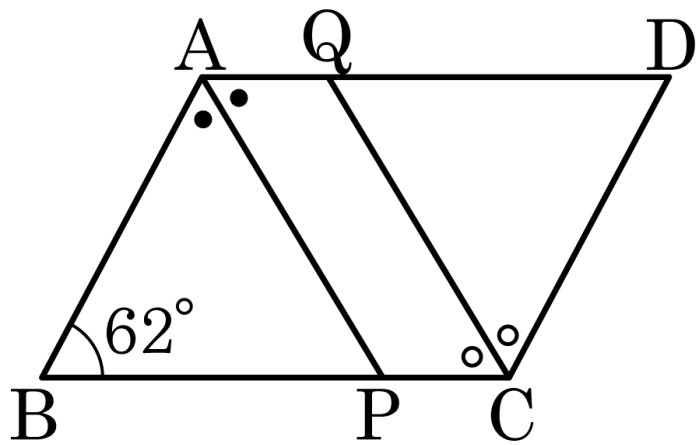
해설

세 변의 길이를 각각 a, b, c 라 하면

$\overline{AE}$ 는 내접원의 반지름의 길이와 같으므로 $\triangle ABC = \frac{1}{2} r(a+b+c)$ 에서

$$a+b+c = 48 \times \frac{2}{3} = 32$$

3. 다음 평행사변형ABCD 에서 $\overline{AP}$, $\overline{CQ}$는 각각 $\angle A, \angle C$ 의 이등분선이고 $\angle ABP = 62°$ 일 때, $\angle APC$ 의 크기는?

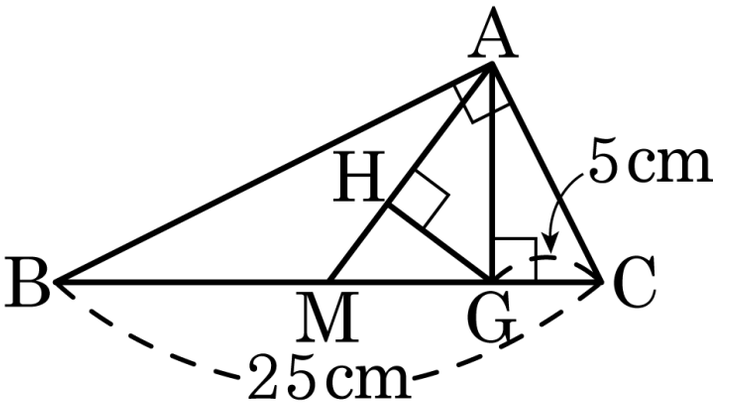


① $62°$ ② $59°$ ③ $118°$ ④ $121°$ ⑤ $124°$

해설

$\angle ABP = 62°$ 이므로 $\angle BAP = (180° - 62°) \div 2 = 59°$
따라서 $\angle APC = 62° + 59° = 121°$

4. 다음 그림의 $\triangle ABC$에서 점 M은 $\overline{BC}$의 중점이다. $\overline{AG} \perp \overline{BC}$, $\overline{GH} \perp \overline{AM}$, $\overline{BC} = 25\text{cm}$, $\overline{GC} = 5\text{cm}$일 때, $\overline{AH}$의 길이를 구하면?



① 4 ② 8 ③ 12 ④ 14 ⑤ 16

해설

$\triangle ABC$에서 $\overline{AG}^2 = \overline{CG} \times \overline{BG}$ 이므로 $\overline{AG}^2 = 20 \times 5$

$\therefore \overline{AG} = 10$

$\triangle AMG$에서 $\overline{AG}^2 = \overline{AH} \times \overline{AM}$이고 $\overline{AM} = \frac{25}{2} = 12.5$ 이므로

$10^2 = \overline{AH} \times 12.5$

$\therefore \overline{AH} = 8$