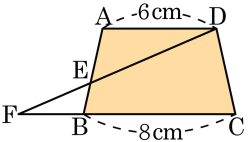
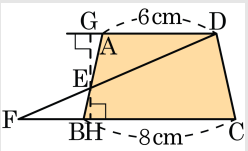
1. 다음 그림에서 □ABCD 는 $\overline{AD} // \overline{BC}$ 인 사다리꼴이다. $\overline{AE} : \overline{EB} = 7 : 4$, $\triangle AED = 21\,\text{cm}^2$ 일 때, $\triangle DFC$ 의 넓이를 구하면?



① $\frac{400}{7}\,\text{cm}^2$ ② $\frac{320}{7}\,\text{cm}^2$ ③ $\frac{360}{7}\,\text{cm}^2$

④ $\frac{400}{7}\,\text{cm}^2$ ⑤ $\frac{440}{7}\,\text{cm}^2$

해설



점 E 를 지나고 $\overline{AD}$, $\overline{BC}$ 의 연장선에 수직인 선을 그어 $\overline{GH}$ 라고 하면 $\overline{AE} : \overline{EB} = 7 : 4$ 이므로 $\overline{AD} : \overline{FB} = 7 : 4$ $\therefore\ \overline{FB} = \frac{24}{7}\,(\text{cm})$

$\triangle AED = \frac{1}{2} \times 6 \times \overline{GE} = 21\,(\text{cm}^2)$ 이므로

$\overline{GE} = 7\,(\text{cm})$, $\overline{GH} = 11\,(\text{cm})$

$$\therefore\ \triangle DFC = \frac{1}{2} \times \left(\frac{24}{7} + 8\right) \times 11$$
$$= \left(\frac{12}{7} + \frac{28}{7}\right) \times 11$$
$$= \frac{440}{7}\,(\text{cm}^2)$$