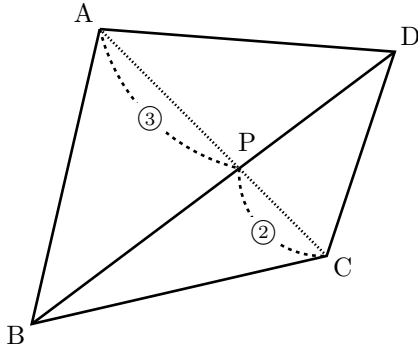


# 反射テスト 面積比 四角形と対角線の基礎 01

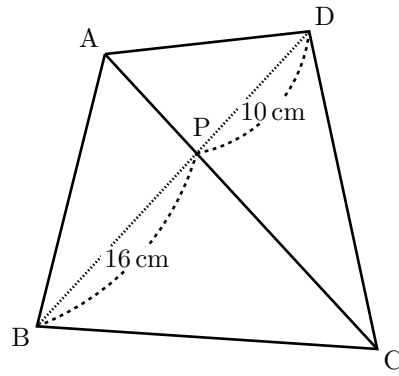
1. 面積比を求めよ。(S級 25秒, A級 40秒, B級 55秒, C級 1分30秒)

(1)



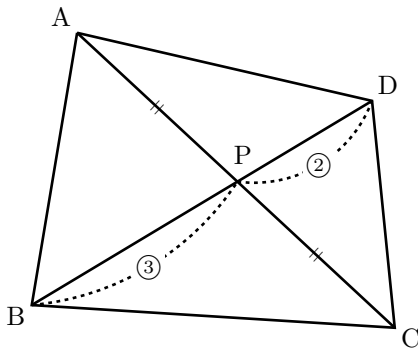
$$\triangle ABD : \triangle CBD$$

(2)



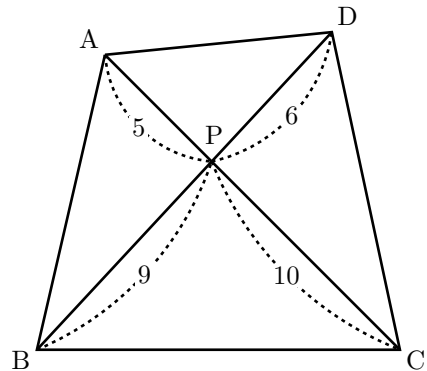
$$\triangle BCA : \triangle DCA$$

(3)



$$\triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA$$

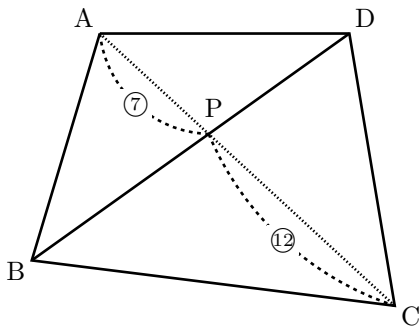
(4)



$$\triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA$$

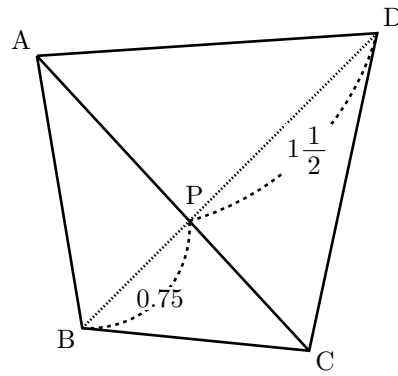
2. 面積比を求めよ。(S級 25秒, A級 40秒, B級 55秒, C級 1分30秒)

(1)



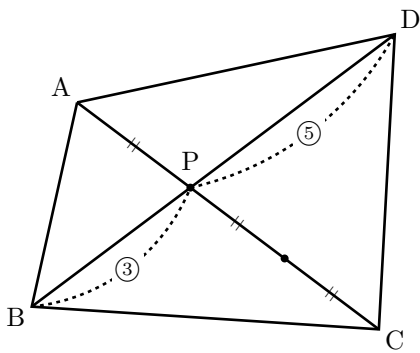
$\triangle ABD : \triangle CBD$

(2)



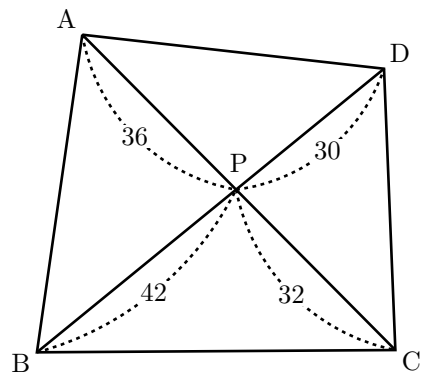
$\triangle BCA : \triangle DCA$

(3)



$\triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA$

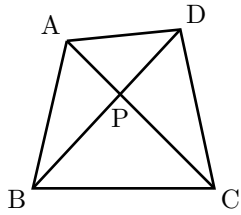
(4)



$\triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA$

# 反射テスト 面積比 四角形と対角線の基礎 01 解答解説

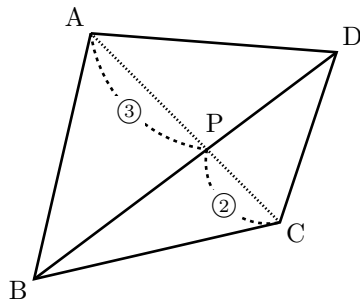
1. 面積比を求めよ。(S級 25秒, A級 40秒, B級 55秒, C級 1分30秒)



★ 四角形の面積比

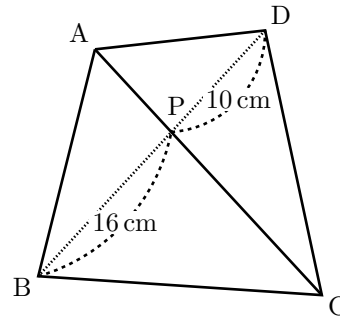
- ①  $\triangle ABD : \triangle CBD = PA : PC$
- ②  $\triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA$   
 $= (PA \times PB) : (PB \times PC) : (PC \times PD) : (PD \times PA)$

(1)



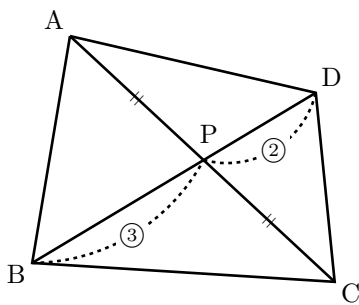
$$\begin{aligned} \triangle ABD : \triangle CBD \\ = PA : PC = 3 : 2 \end{aligned}$$

(2)



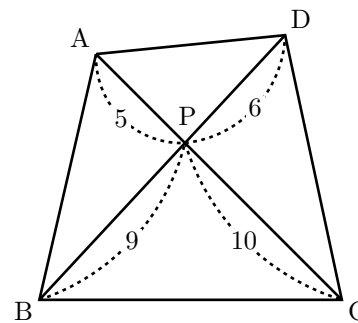
$$\begin{aligned} \triangle BCA : \triangle DCA \\ = PB : PD = 16 : 10 = 8 : 5 \end{aligned}$$

(3)



$$\begin{aligned} \triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA \\ = (PA \times PB) : (PB \times PC) : (PC \times PD) : (PD \times PA) \\ = (1 \times 3) : (3 \times 1) : (1 \times 2) : (2 \times 1) \\ = 3 : 3 : 2 : 2 \end{aligned}$$

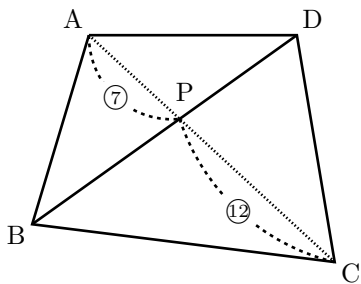
(4)



$$\begin{aligned} \triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA \\ \left\{ \begin{array}{l} PA : PC = 5 : 10 = 1 : 2 \\ PB : PD = 9 : 6 = 3 : 2 \end{array} \right. \\ \therefore (PA \times PB) : (PB \times PC) : (PC \times PD) : (PD \times PA) \\ = (1 \times 3) : (3 \times 2) : (2 \times 2) : (2 \times 1) \\ = 3 : 6 : 4 : 2 \end{aligned}$$

2. 面積比を求めよ。(S級 25秒, A級 40秒, B級 55秒, C級 1分30秒)

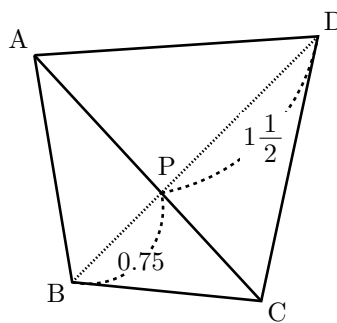
(1)



$$\triangle ABD : \triangle CBD$$

$$= PA : PC = 7 : 12$$

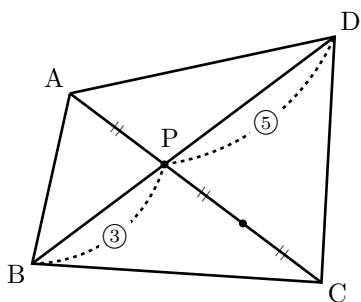
(2)



$$\triangle BCA : \triangle DCA$$

$$= PB : PD = 0.75 : 1\frac{1}{2} = 1 : 2$$

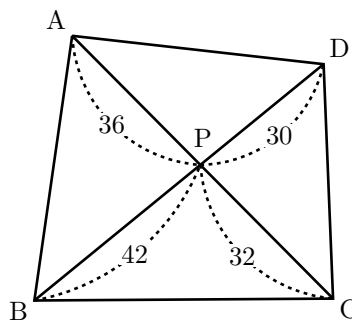
(3)



$$\triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA$$

$$\begin{aligned} &= (PA \times PB) : (PB \times PC) : (PC \times PD) : (PD \times PA) \\ &= (1 \times 3) : (3 \times 2) : (2 \times 5) : (5 \times 1) \\ &= \mathbf{3 : 6 : 10 : 5} \end{aligned}$$

(4)



$$\triangle PAB : \triangle PBC : \triangle PCD : \triangle PDA$$

$$\begin{aligned} &\begin{cases} PA : PC = 36 : 32 = 9 : 8 \\ PB : PD = 42 : 30 = 7 : 5 \end{cases} \\ &\therefore (PA \times PB) : (PB \times PC) : (PC \times PD) : (PD \times PA) \\ &= (9 \times 7) : (7 \times 8) : (8 \times 5) : (5 \times 9) \\ &= \mathbf{63 : 56 : 40 : 45} \end{aligned}$$