次の 2 点 A, B について, $\overrightarrow{AB}$ を成分表示し, $|\overrightarrow{AB}|$ も求めよ。

(1) A(2, 1, 4), B(3, −1, 5)

(2) A(3, 0, −2), B(1, −4, 2)

(1)
$$\overrightarrow{AB} = (3-2, \ -1-1, \ 5-4)$$
$$= (1, -2, 1)$$
$$|\overrightarrow{AB}| = \sqrt{1+4+1} = \sqrt{6}$$

答 $\begin{cases} \overrightarrow{AB} = (1, -2, 1) \\ |\overrightarrow{AB}| = \sqrt{6} \end{cases}$

(2)
$$\overrightarrow{AB} = (1-3, \ -4-0, \ 2-(-2))$$
$$= (-2, -4, 4)$$
$$|\overrightarrow{AB}| = \sqrt{4+16+16}$$
$$= \sqrt{36}$$
$$= 6$$

答 $\begin{cases} \overrightarrow{AB} = (-2, -4, 4) \\ |\overrightarrow{AB}| = 6 \end{cases}$