

$$\begin{aligned}
 \langle v, u \rangle &= \langle (4, 5), (3, -2) \rangle \\
 &= (4)(3) + (5)(-2) \\
 &= 12 - 10 \\
 &= 2
 \end{aligned}$$

$$\langle u, v \rangle = \langle v, u \rangle$$

$$\begin{aligned}
 \textcircled{b} \langle u+v, w \rangle &= \langle u, w \rangle + \langle v, w \rangle \\
 \langle u+v, w \rangle &= \langle (3, -2) + (4, 5), (-1, 6) \rangle \\
 &= \langle (3+4, -2+5), (-1, 6) \rangle \\
 &= \langle (7, 3), (-1, 6) \rangle \\
 &= (7)(-1) + (3)(6) \\
 &= -7 + 18 \\
 &= 11
 \end{aligned}$$

$$\begin{aligned}
 \langle u, w \rangle + \langle v, w \rangle &= \langle (3, -2), (-1, 6) \rangle + \langle (4, 5), (-1, 6) \rangle \\
 &= (3)(-1) + (-2)(6) + (4)(-1) + (5)(6) \\
 &= (-3 - 12) + (-4 + 30) \\
 &= (-15) + (26) \\
 &= -15 + 26 \\
 &= 11
 \end{aligned}$$

$$\langle u+v, w \rangle = \langle u, w \rangle + \langle v, w \rangle$$