Answer on Question #59655 – Math – Analytic Geometry

Question

1. A dot product said to be distributive, if:

   a) $\boldsymbol{m} \cdot \boldsymbol{u} = \boldsymbol{u} \cdot \boldsymbol{m}$;

   b) $\boldsymbol{m}(\boldsymbol{u} \cdot \boldsymbol{v}) = \boldsymbol{v}(\boldsymbol{m} \cdot \boldsymbol{u})$;

   c) $\boldsymbol{u} \cdot (\boldsymbol{v} + \boldsymbol{w}) = (\boldsymbol{u} \cdot \boldsymbol{v} + \boldsymbol{u} \cdot \boldsymbol{w})$;

   d) $\boldsymbol{m} = \boldsymbol{u}$.

Solution

Dot product is distributive if it satisfies:

$$\boldsymbol{u} \cdot (\boldsymbol{v} + \boldsymbol{w}) = (\boldsymbol{u} \cdot \boldsymbol{v} + \boldsymbol{u} \cdot \boldsymbol{w}).$$

Hence, the correct answer is c).

Answer: c) $u \cdot (v + w) = (u \cdot v + u \cdot w)$.