

## Answer on Question #46934 - Math - Vector Calculus

### Question:

Determine the value of  $y$  so that  $u=2i+yj+k$  and  $v = 4i -2j -2k$  are perpendicular.

Find  $y$

2

4

1

3

### Solution:

If two vectors are perpendicular, then the dot product should be equal to zero:

$$u \cdot v = 2 \cdot 4 + y(-2) + 1(-2) = 0$$

$$6 - 2y = 0$$

$$6 = 2y$$

$$y = 3$$

**Answer: 3**