Guaranteach
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Practice with Vectors

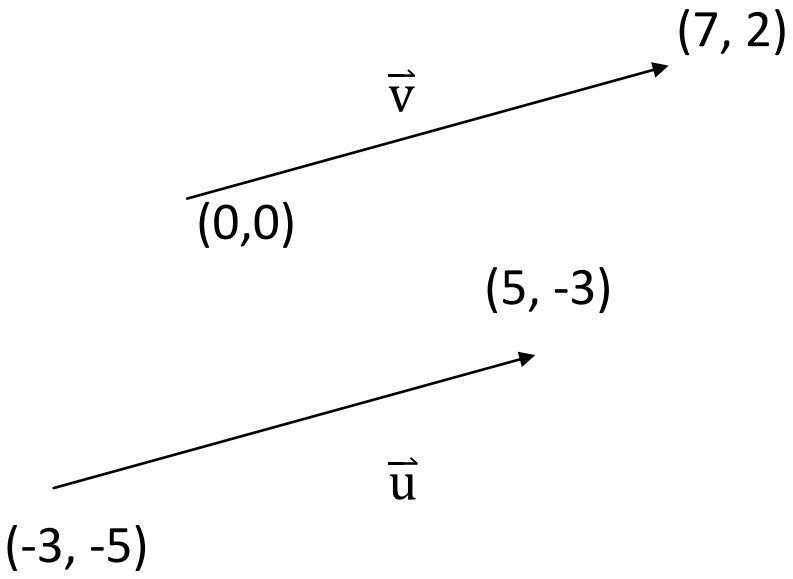
Please choose the best answer to each of the following questions.

1. What is the magnitude of the vector $\langle 2, -3, 1, 7 \rangle$?

   $\sqrt{63}$ $\sqrt{7}$

   $\sqrt{45}$ 7

2. How are the vectors $\vec{v}$ and $\vec{u}$ related?



Equivalent
Parallel but not equivalent
Same magnitude but not equivalent
Neither parallel nor same magnitude

3. What is the horizontal component of the vector from (5, 8) to (6, 10)?

   1
   2
   5
   6

4. If $\vec{u} = \langle 5, 4, 0, 6 \rangle$, find $-2\vec{u}$.

   $\langle 3, 2, -2, 4 \rangle$
   $\langle 7, 6, 2, 8 \rangle$
   $\langle -10, -8, -2, -12 \rangle$
   $\langle -10, -8, 0, -12 \rangle$

5. The standard basis vector $\vec{j}$ is parallel to which axis on the coordinate plane?

   x-axis
   y-axis
   z-axis
   origin

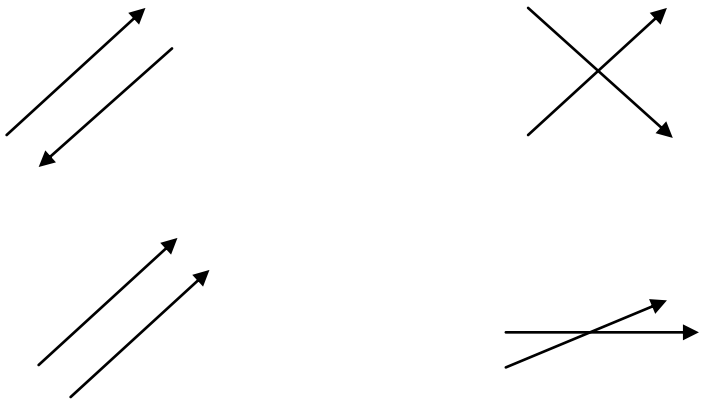
6. Find $\langle 3, 7, -1 \rangle + \langle 2, -8, 0 \rangle$.

   $\langle 5, 1, -1 \rangle$
   $\langle 5, -1, -1 \rangle$
   $\langle 6, -56, 0 \rangle$
   $\langle 6, -1, 0 \rangle$

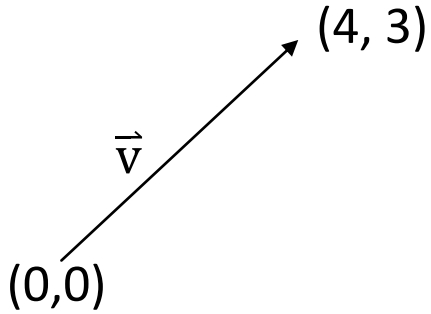
7. Vector $\vec{v}$ makes a 40 degree angle with the horizontal, and has a magnitude of 15. Find the vertical component.

   9.64
   10.35
   11.49
   38.64

8. Which diagram shows antiparallel vectors?



9. In the following diagram, what is the vertical component of vector $\vec{v}$?



10. The vector $\langle 5, -8 \rangle$ has an endpoint $\langle 0, 7 \rangle$. Find the initial point.

$\langle 5, 15 \rangle$
$\langle 5, -1 \rangle$
$\langle -5, -15 \rangle$
$\langle -5, -1 \rangle$