

Name

10-6

Lesson Master

Questions on SPUR Objectives  
See Student Pages pages 673–677 for objectives.

SKILLS

Objective C

1. Let  $\vec{u} = \langle 4, 7 \rangle$  and  $\vec{v} = \langle -2, 0.5 \rangle$ . Find each vector in component form.
- a.  $3\vec{u}$  \_\_\_\_\_

b.  $-4\vec{v}$  \_\_\_\_\_

c.  $-\vec{u} + 2\vec{v}$  \_\_\_\_\_
2. Let  $\vec{w} = [0.8, 12^\circ]$  and  $\vec{z} = [12, 47^\circ]$ . Find each vector in polar form.
- a.  $-6\vec{w}$  \_\_\_\_\_

b.  $\frac{1}{3}\vec{z}$  \_\_\_\_\_

PROPERTIES

Objectives E and F

3. Prove that for all vectors  $\vec{u}$  and  $\vec{v}$  and all real numbers  $k$ ,  $k(\vec{u} + \vec{v}) = k\vec{u} + k\vec{v}$ .
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

In 4–6, tell whether the two given vectors are parallel and justify your answer.

4.  $\langle 1, -2 \rangle$  and  $\langle -6, 12 \rangle$  \_\_\_\_\_
5.  $[13, 17^\circ]$  and  $[5, 163^\circ]$  \_\_\_\_\_

REPRESENTATIONS

Objectives M and N

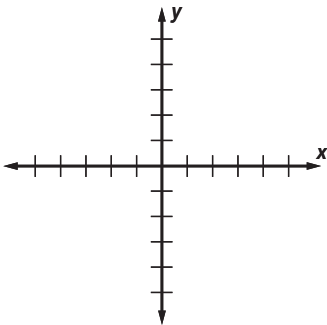
6. Use the grid at the right and label your sketches.
- a. Sketch  $\vec{u} = [2, 45^\circ]$  and  $\vec{v} = [3, 150^\circ]$ .

b. Sketch  $2\vec{u} - \vec{v}$ .

c. Sketch  $\frac{1}{2}\vec{u} + 3\vec{v}$ .
7. Let  $\vec{v} = \langle 4, -3 \rangle$  and  $P = (-1, 2)$ .
- a. Find a vector equation for the line through  $P$  parallel to  $\vec{v}$ . \_\_\_\_\_

b. Find parametric equations for the line in Part a. \_\_\_\_\_

c. Find an equation for the line in Parts a and b in point-slope form. \_\_\_\_\_
8. Find a vector equation for the line with parametric equations  $\begin{cases} x = 2 + 0.5t \\ y = 8 - 2t \end{cases}$ .
- \_\_\_\_\_



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