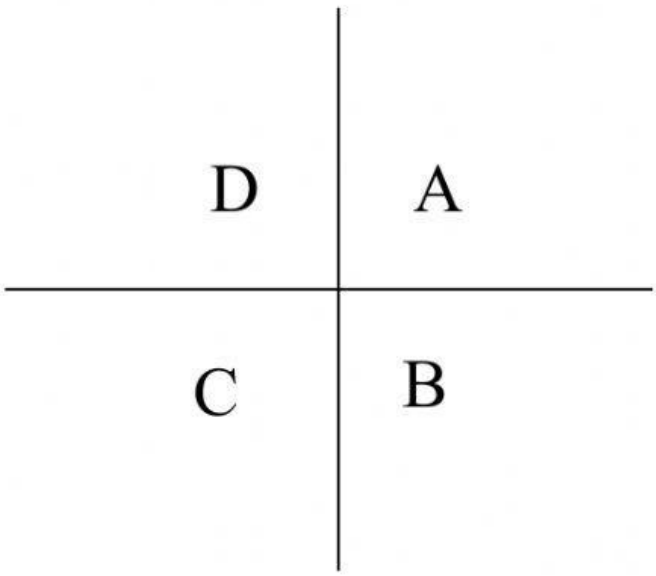
Name: _____ Date: _____

PHYSICS
VECTORS AND SCALARS

Part 1. Determine if the physics parameter is a **vector measurement** or **scalar measurement**. If a vector, write **V** in the space beside the word. If a scalar, write **S** in the space beside the word.

_____	Time	_____	Work
_____	Distance	_____	Momentum
_____	Area	_____	Weight
_____	Velocity	_____	Mass
_____	Speed	_____	Volume
_____	Force	_____	Charge
_____	Displacement	_____	Magnetic Field
_____	Energy	_____	Acceleration



Part 2. Coordinates and Direction. Identify in which quadrant (A, B, C, or D) each direction lies given geographic or Cartesian directions. Choose the correct letter in the box next to the given direction.

Move east, then north		45°	
Move north, then west		355°	
Move south, then east		30°	
Move west, then south		305°	
325°		100°	
120°		225°	

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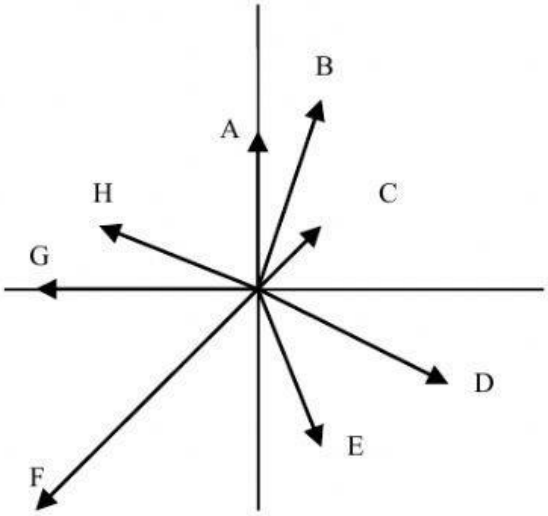
Part 3. Vectors. Match the letter of the vector on the coordinates with the magnitude & directions listed in the table to the right. The directions are based on polar coordinates.



2 km @ 45°	_____	8 km @ 330°	_____
8 km @ 180°	_____	6 km @ 160°	_____
10 km @ 225°	_____	6 km @ 290°	_____
4 km @ 90°	_____	7 km @ 70°	_____

Part 4: Multiple Choice. Choose the correct answer.

_____ 1. Which positional directions are negative directions by convention?
A. Up & Left
B. Up & Right
C. Down & Left
D. Down & Right

_____ 2. Which positional directions are positive directions by convention?
A. Up & Left
B. Up & Right
C. Down & Left
D. Down & Right

_____ 3. Which geographic directions are negative directions by convention?
A. North & East
B. North & West
C. South & East
D. South & West

_____ 4. Which geographic directions are positive directions by convention?
A. North & East
B. North & West
C. South & East
D. South & West

_____ 5. All scalar measurements need
A. Magnitude and direction
B. Magnitude only
C. Direction only
D. No units

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_____ 6. All vector measurements need

A. Magnitude and direction
B. Magnitude only
C. Direction only
D. No units

_____ 7. Betty rode her motorcycle with a velocity of 30 m/s NW. What is the 30 m/s?

A. The direction
B. The magnitude
C. The displacement
D. The measurement

_____ 8. Which vectors are identical?

A. 80 north & 80 east
B. 80 north & 60 north
C. 60 north & 60 north
D. 60 north & 60 east

_____ 9. Which vectors are identical?

A. 25 south & 50 south
B. 50 east & 50 east
C. 50 east & 25 east
D. 25 east & 25 west

_____ 10. Helen walked 50 m E, turned, walked 40 m N. Which direction best describes Helen's overall direction of movement?

A. 39°
B. 129°
C. 141°
D. 219°

_____ 11. Lolita walked 80 m W, turned, walked 25 m N. Which direction best describes Lolita's overall direction of movement?

A. 83°
B. 163°
C. 197°
D. 253°

_____ 12. Noelle traveled 100 m @ 90°, turned 50 m @ 180°. Which direction best describes Noelle's overall direction of movement?

A. North
B. Northeast
C. Northwest
D. East

LIVEWORKSHEETS