Vectors
Differentiated worksheet

Class: Grade 10 Teacher: Mr. Ali	Subject: Physics	Assigning date: …… Due date: ……

L.O:

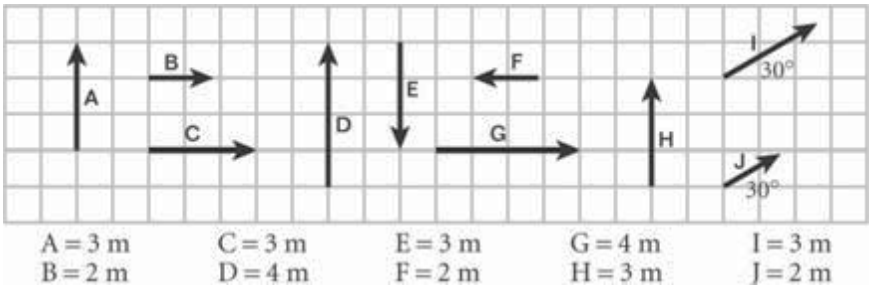
- **Distinguish** between a scalar and a vector.
- **Add** and **subtract** vectors by using the graphical method.
- **Resolve vectors into their x and y components**

Success criteria:

- I can describe the scalar quantity
- I can describe the vector quantity
- I can compare between scalar and vector quantities
- I can add vectors graphically
- I can resolve the vector into it's x and y components

Low achievers, Moderate achievers, and high achievers, SOD

Use the following vectors to answer the questions.



1. Which vectors have the same magnitude?

2. Which vectors have the same direction?

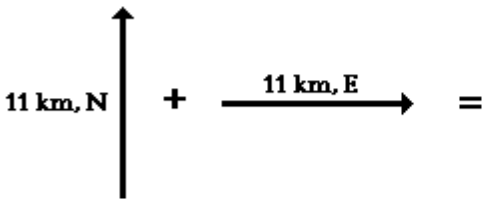
3. Which arrows, if any, represent the same vector?

4. In the space provided, construct and label a diagram that shows the vector sum A + B.

5. In the space provided, construct and label a diagram that shows the vector addition G+H

Find the **resultant** graphically.

1)



2)

Value	Scalar or vector
2.88 m/s	
66 m/s north	
4000 kg	
- 65 N	
54 m to the left	
4:58	
8.3 m	

3. Determine the values on the table weather they are Scalar or Vector quantity

Task 2

Find the X and Y components of the following and sketch them.

1. **12 m/s at 66^0 from the x-axis.**

2. **87 N south**

3. **4m/s north**

4. **266 m at 185^0 from +x axis**

5. **4.8 m/s east**

1. How fast must a truck travel to stay beneath an airplane that is moving 105 km/h at an angle of 25° to the ground?

2. What is the magnitude of the vertical component of the velocity of the plane in item 1?

3. A skyrocket travels 113 m at an angle of 82.4° with respect to the ground and toward the south. What is the rocket's horizontal displacement?

4. A tiger leaps with an initial velocity of 55.0 km/h at an angle of 13.0° with respect to the horizontal. What are the components of the tiger's velocity?

5. Find the horizontal and vertical components of the 125 m displacement of a superhero who flies down the top of a tall building at an angle of 25 deg below the horizontal?

Directions: *Graphically add each pair of vectors shown below in its box, making sure to show the vector addition* as well as *the resultant with a dotted line and arrowhead.* If there is no resultant, ***write "no R".***

Example: