The work in GREEN is required.
The work in PURPLE is helpful hints.

Name _____   Date _____

Honors Physics   Vector/Projectiles WS #5H
Period _____   Mrs. Nadworny

A

(12 pts)   **Vector Components**

Directions – Read textbook pages 88 – 96. Solve the following problem using the graphical (scale) method and mathematical method we've learned. Show all of your work in the space provided.

1. Into how many possible components can a single vector be resolved? — Infinite

    A) one   B) two   C) three   (D) unlimited

    ⤷ we choose 2 so we can use trig

2. Which combination of three concurrent vectors could not produce a resultant of 0 N?   Add 2 smaller #s, need to meet / beat Larger # for R=0N

    A) 4 N, 6 N, 9 N   B) 3 N, 3 N, 3 N   (C) 2 N, 1 N, 5 N   D) 7 N, 3 N, 4 N

3. Fido's owner applies a 75.0 N force on the leash at a 40.0° angle to the horizon. What are the vertical and horizontal components of the force?

Scale Method	**Mathematical Method**
Redraw the vector. Picture is not to scale F_x $7.60 \text{cm} \left(\frac{7.5N}{1cm} \right)$ **57 N left** F_y $5.90 \text{cm} \left(\frac{7.5N}{1cm} \right)$ **44 N up** 1 cm = 7.5N • Draw 75N @ 40° • Draw in legs • Measure legs + convert • Include direction (diagram: dog on leash, 75.0N hypotenuse at 40.0°, F_x = 7.60 cm, F_y = 5.90 cm)	(diagram: 75N at 40°, F_y vertical, F_x horizontal) **OR** $F = 75.0N$ $\theta = 40.0°$ $F_x = ?$ $F_y = ?$ $F_x = F\cos\theta$ $= 75.0N \cos 40.0°$ $= 57.5 N$ left $F_y = F\sin\theta$ $= 75.0N \sin 40.0°$ $= 48.2 N$ up • need givens + unknowns • 2 equations • 2 sub w/units • 2 answers sig figed • Include direction

Answers in size order: 48.2, 57.5