

NAME: Key

DATE: \_\_\_\_\_

Solve the following pairs of numbers. For each problem, write a slope triangle and state all work. Write the magnitude and direction of the resultant for the last problem.

1) 100 units and 150 units  $\sqrt{100^2 + 150^2} = 182$   $\tan^{-1}\left(\frac{100}{150}\right) = 33.7^\circ$



182 units @  $33.7^\circ$  NE

2) 100 units and 25 units  $\sqrt{100^2 + 25^2} = 104$   $\tan^{-1}\left(\frac{100}{25}\right) = 86^\circ$



104 units @  $86^\circ$  SE

3) 100 units and 100 units  $\sqrt{100^2 + 100^2} = 141$   $\tan^{-1}\left(\frac{100}{100}\right) = 45^\circ$



141 units @  $45^\circ$  E of S

4) 100 units and 200 units  $\sqrt{100^2 + 200^2} = 224$   $\tan^{-1}\left(\frac{100}{200}\right) = 26.6^\circ$



224 units @  $26.6^\circ$  NE of W

5) 100 units and 100 units  $\sqrt{100^2 + 100^2} = 141$   $\tan^{-1}\left(\frac{100}{100}\right) = 45^\circ$



141 units @  $45^\circ$  NE E