Name: \_\_\_\_\_

## **VECTORS**

Determine whether the following vectors are equivalent. Show ALL of your work for credit.

1)  $\overrightarrow{RS} = \overrightarrow{XY}$  given that R = (-3, 7) S = (0, 4) X = (-2, 11) Y = (1, 14)

2)  $\overrightarrow{RS} = \overrightarrow{XY}$  given that R = (2,0) S = (-6,8) X = (4,4) Y = (12,-4)

3)  $\overrightarrow{RS} = \overrightarrow{XY}$  given that R = (9, -5) S = (-1, -1) X = (10, 0) Y = (0, 4)

4)  $\overrightarrow{RS} = \overrightarrow{XY}$  given that R = (-11, 17) S = (9, 6) X = (4, 3) Y = (24, -8)

5)  $\overrightarrow{RS} = \overrightarrow{XY}$  given that R = (3, -7) S = (8, 12) X = (8, 12) Y = (3, -7)

Draw each of the vectors on the grid below. Label each vector with the letters used.



10) Find the direction (component form) and magnitude for problems 8 and 9.

## Find the direction and magnitude for each of the following.



Use the given information to find the following resultant vectors algebraically.

- $\vec{v} = \langle 3, 2 \rangle \ \vec{u} = \langle -6, 2 \rangle \quad R = (-2, 11) \ S = (4, -5) \quad T = (10, 3)$
- 15)  $\vec{u} + \vec{v}$  16)  $\vec{u} \vec{v}$  17) 17.  $\vec{u} + \vec{RS}$

18) $\overline{RS} - \overline{ST}$ 19) $2\vec{u} + 3\vec{v}$ 20) $3\overline{ST}$	$-\overline{RT}$
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Find the resultant vector geometrically.



23) 3**v** 

24) 2**u** + w

25) 2**u** – w

26) w + 2x