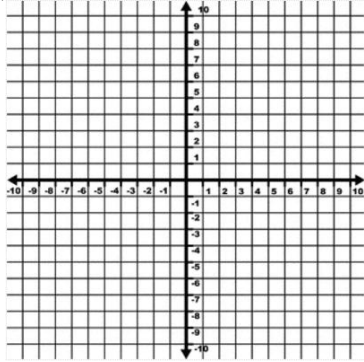


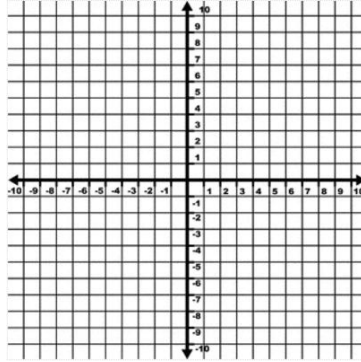
Draw the resultant vector with the given conditions.

$$M = (-4, 6) \quad C = (2, -7) \quad H = (0, 6) \quad u = \langle -3, -1 \rangle \quad v = \langle 2, -8 \rangle \quad w = 4i + 8j$$

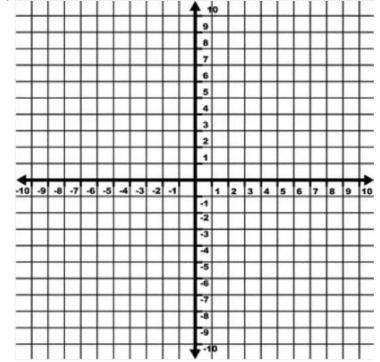
1) \overrightarrow{MC}



2) $u - v$



3) $\overrightarrow{HC} + w$



Determine the unit vector for the following vectors.

4) $v = \langle -5, 8 \rangle$

5) \overrightarrow{HM} where $H = (2, -2)$ and $M = (6, 1)$

6) $w = 6i - 3j$

Using the information provided, determine if the vectors are equal.

$$v = 3j \quad w = 5i \quad P = (-1, 4) \quad Q = (6, 2) \quad R = (-3, 1) \quad S = (2, 4)$$

7) $v + w$ and \overrightarrow{RS}

8) $u = \langle -7, 2 \rangle$ and \overrightarrow{PQ}

Determine each resultant using the following information:

$$u = \langle 2, 5 \rangle \quad v = \langle -1, 3 \rangle \quad w = \langle 9, -6 \rangle$$

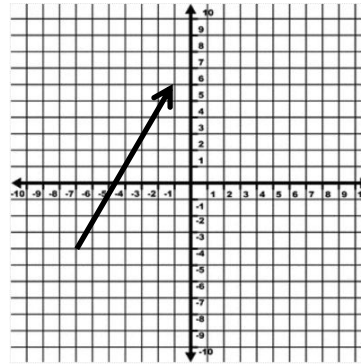
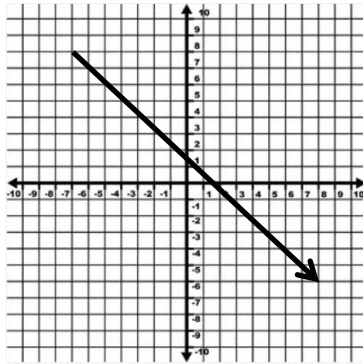
9) $u + v$

10) $\|w\|$

11) $u - 3w$

12) $(v - u) \cdot w$

13) Write the graphed vector in $ai + bj$ form and determine its magnitude.



14) Determine $u \cdot v$ if $u = \langle 3, -4 \rangle$ and $v = \langle 6, 2 \rangle$. 15) Determine $v \cdot u$ if $u = \langle -1, 4 \rangle$ and $v = \langle 8, 2 \rangle$.

16) Determine the angle between the vectors if $u = \langle -7, 9 \rangle$ and $v = \langle 4, -5 \rangle$

17) Determine the angle between the vectors if $u = \langle 6, 0 \rangle$ and $v = \langle 0, -3 \rangle$

Write the angle in standard form

18) Bearing 123°

19) $N48^\circ W$

20) $S14^\circ W$

21) $S85^\circ E$

Write each vector given its magnitude and direction in component $(ai + bj)$ form.

22) speed = 39 m/s at 73° from the horizontal

23) speed = 39 m/s at $N12^\circ E$