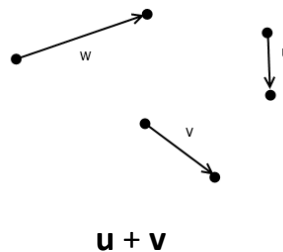Vectors

1. Use the vectors in the figure to graph each of the following vectors (similar to p.346 #9-16)
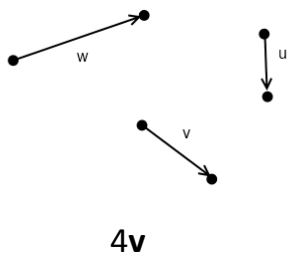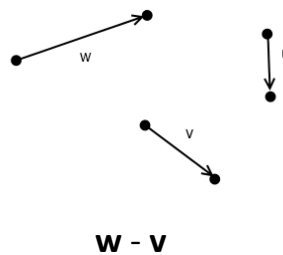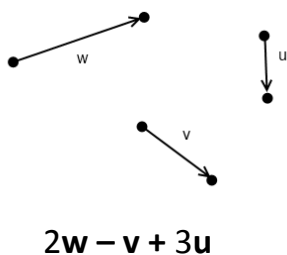

u + v

2. Use the vectors in the figure to graph each of the following vectors (similar to p.346 #9-16)

4v

3. Use the vectors in the figure to graph each of the following vectors (similar to p.346 #9-16)

w - v

4. Use the vectors in the figure to graph each of the following vectors (similar to p.346 #9-16)

2w − v + 3u

5. The vector v has initial point P and terminal point Q. Write v in the form ai + bj; that is, find its position vector (Similar to p.346 #27-34)

P = (-5, 4); Q = (3, 2)

Initial Point : (x_1, y_1)
Terminal Point : (x_2, y_2)
Position Vector : $< x_2 - x_1, y_2 - y_1 >$

6. Find $\|v\|$
(Similar to p.346 #35-40)

v = -2**i** + 4**j**

Given : $v = ai + bj$
$\|v\| = \sqrt{a^2 + b^2}$

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7. Find $\|v\|$
(Similar to p.346 #35-40)

v = 4**i** + 6**j**

Given : $v = ai + bj$
$\|v\| = \sqrt{a^2 + b^2}$

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8. Find each quantity if v = 7i – 3j
and w = -4i + 6j
(Similar to p.346 #41-46)

5**v** – 3**w**

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9. Find the unit vector in the same
direction as v
(Similar to p.346 #47-52)

v = -5**j**

$unit\ vector = \dfrac{v}{\|v\|}$

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10. Find the unit vector in the
same direction as v
(Similar to p.346 #47-52)

v = -4**i** - **j**

$unit\ vector = \dfrac{v}{\|v\|}$

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11. Write the vector v in the form
a**i** + b**j**, given its magnitude $\|v\|$ and
the angle α it makes with the positive
x-axis
(Similar to p.347 #57-62)

$\|v\|$ = 4, α = 30º

$v = \|v\|(\cos \alpha i + \sin \alpha j)$

12. Find the direction angle of v
for each vector
(Similar to p.347 #63-70)

v = -2**i** + 2**j**

$v = ai + bj$

direction angle : $\tan \alpha = \dfrac{b}{a}$

$0° \le \alpha < 360°$

13. Find the direction angle of v
for each vector
(Similar to p.347 #63-70)

v = 3**i** + -7**j**

$v = ai + bj$

direction angle : $\tan \alpha = \dfrac{b}{a}$

$0° \le \alpha < 360°$