REVIEW 8.1, 8.2, 8.5 (Use a separate sheet of paper!) Name_____

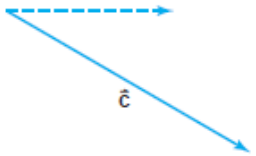
EXTRA PRACTICE

Lesson 8-1 *(Pages 485–492)*

Use a ruler and a protractor to determine the magnitude (in centimeters) and direction of each vector.

1. 

2. 

3. 

Use $\vec{a}$, $\vec{b}$, and $\vec{c}$ above to find the magnitude and direction of each resultant.

7. $\vec{a} - \vec{b}$
8. $2\vec{c}$
9. $2\vec{c} - \vec{b}$

Find the magnitude of the horizontal and vertical components of each vector shown for Exercises 1–3.

10. $\vec{a}$
11. $\vec{b}$
12. $\vec{c}$

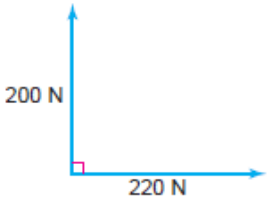
Lesson 8-2 *(Pages 493–499)*

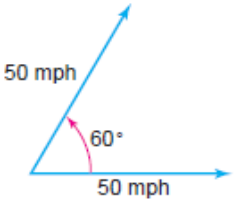
Find the ordered pair that represents $\overrightarrow{AB}$. Then find the magnitude of $\overrightarrow{AB}$.

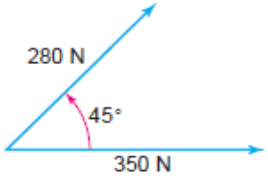
1. $A(3, 6), B(4, 1)$
3. $A(0, -4), B(-1, -8)$
5. $A(-6, 0), B(-3, -6)$

Lesson 8-5 *(Pages 513–519)*

Find the magnitude and direction of the resultant vector for each diagram.

1. 

2. 

3. 

4. A 90 Newton force and a 110 Newton force act on the same object. The angle between the measures 90°. Find the magnitude of the resulting force.

Lesson 8-6 *(Pages 520–525)*

Write a vector equation of the line that passes through point P and is parallel to $\vec{a}$. Then write parametric equations of the line.

1. $P(2, 3), \vec{a} = \langle 1, 0 \rangle$
2. $P(-1, -4), \vec{a} = \langle 5, 2 \rangle$
3. $P(-3, 6), \vec{a} = \langle -2, 4 \rangle$
4. $P(3, 0), \vec{a} = \langle 0, -1 \rangle$

Write an equation in slope-intercept form of the line with the given parametric equations.

5. $x = 3t$
   $y = 2 + t$
6. $x = -1 + 2t$
   $y = 4t$
7. $x = 3t - 10$
   $y = t - 1$

Lesson 8-7 *(Pages 527–533)*

1. **Sports** A golf ball is hit with an initial velocity of 70 yards per second at 34° with the horizontal. Find the initial vertical and horizontal velocity for the ball.

Lesson 8-1 *(Pages 485–492)*

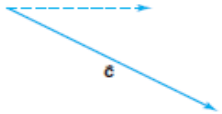
Use a ruler and a protractor to determine the magnitude (in centimeters) and direction of each vector.

1. 

1.7 cm; 70°

2. 

2.1 cm; 104°

3. 

3.6 cm; 330°

Use $\vec{a}$, $\vec{b}$, and $\vec{c}$ above to find the magnitude and direction of each resultant.

4. $\vec{a} + \vec{b}$ 3.6 cm; 89°
5. $\vec{b} + \vec{c}$ 2.6 cm; 23°
6. $\vec{a} + \vec{c}$ 3.7 cm; 357°
7. $\vec{a} - \vec{b}$ 1.2 cm; 342°
8. $2\vec{c}$ 7.2 cm; 330°
9. $2\vec{c} - \vec{b}$ 8.8 cm; 340°

Find the magnitude of the horizontal and vertical components of each vector shown for Exercises 1–3.

10. $\vec{a}$ 0.58; 1.60
11. $\vec{b}$ 0.51; 2.04
12. $\vec{c}$ 3.12; 1.8

Lesson 8-2 *(Pages 493–499)*

Find the ordered pair that represents $\overline{AB}$. Then find the magnitude of $\overline{AB}$.

1. $A(3, 6), B(4, 1)$ $\langle 1, -5\rangle$; $\sqrt{26}$
2. $A(-1, 3), B(-2, 2)$ $\langle -1, -1\rangle$; $\sqrt{2}$
3. $A(0, -4), B(-1, -8)$ $\langle -1, -4\rangle$; $\sqrt{17}$
4. $A(1, 10), B(3, -9)$ $\langle 2, -19\rangle$; $\sqrt{365}$
5. $A(-6, 0), B(-3, -6)$ $\langle 3, -6\rangle$; $3\sqrt{5}$
6. $A(4, -5), B(0, 7)$ $\langle -4, 12\rangle$; $4\sqrt{10}$

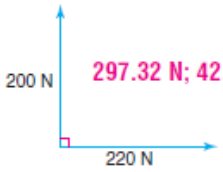
Lesson 8-4 *(Pages 505–511)*

Find each inner product and state whether the vectors are perpendicular. Write *yes* or *no*.

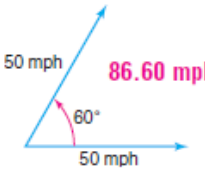
1. $\langle 3, 4\rangle \cdot \langle 2, 5\rangle$ 26; no
2. $\langle -3, 2\rangle \cdot \langle 4, 6\rangle$ 0; yes
3. $\langle -5, 3\rangle \cdot \langle 2, -3\rangle$ −19; no
4. $\langle 8, 6\rangle \cdot \langle -2, -3\rangle$ −34; no
5. $\langle 3, 4, 0\rangle \cdot \langle 4, -3, 6\rangle$ 0; yes
6. $\langle 4, 5, 1\rangle \cdot \langle -1, -2, 3\rangle$ −11; no

Lesson 8-5 *(Pages 513–519)*

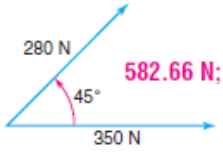
Find the magnitude and direction of the resultant vector for each diagram.

1. 

297.32 N; 42.3°

2. 

86.60 mph; 30°

3. 

582.66 N; 19.9°

4. A 90 Newton force and a 110 Newton force act on the same object. The angle between the forces measures 90°. Find the magnitude of the resulting force. about 142.13 N

Lesson 8-6 *(Pages 520–525)*

Write a vector equation of the line that passes through point P and is parallel to $\vec{a}$. Then write parametric equations of the line.

1. $\langle x - 2, y - 3\rangle = t\langle 1, 0\rangle$; $x = 2 + t$, $y = 3$
2. $\langle x + 1, y + 4\rangle = t\langle 5, 2\rangle$; $x = -1 + 5t$, $y = -4 + 2t$
3. $P(2, 3), \vec{a} = \langle 1, 0\rangle$
4. $P(-1, -4), \vec{a} = \langle 5, 2\rangle$
5. $P(-3, 6), \vec{a} = \langle -2, 4\rangle$ $\langle x + 3, y - 6\rangle = t\langle -2, 4\rangle$; $x = -3 - 2t$, $y = 6 + 4t$
6. $P(3, 0), \vec{a} = \langle 0, -1\rangle$ $\langle x - 3, y\rangle = t\langle 0, -1\rangle$; $x = 3$, $y = -t$

Write an equation in slope-intercept form of the line with the given parametric equations.

5. $x = 3t$, $y = 2 + t$ $y = \frac{1}{3}x + 2$
6. $x = -1 + 2t$, $y = 4t$ $y = 2x + 2$
7. $x = 3t - 10$, $y = t - 1$ $y = \frac{1}{3}x + \frac{7}{3}$

Lesson 8-7 *(Pages 527–533)*

1. about 39.14 yd/s; about 58.03 yd/s

1. **Sports** A golf ball is hit with an initial velocity of 70 yards per second at 34° with the horizontal. Find the initial vertical and horizontal velocity for the ball.