REVIEW 8.4 & 8.6 BOOK

Name Key

Advanced Math

Lesson 8-4 *(Pages 505–511)*

Find each inner dot product. Determine whether the vectors are parallel, perpendicular, or neither. If it's neither, find the angle between the vectors.

1. $\langle 3, 4 \rangle \cdot \langle 2, 5 \rangle$

$3(2) + 4(5) = 26$

$\frac{4}{3} \quad \frac{5}{2}$ Neither

$\cos x = \frac{26}{\sqrt{29} \cdot 5}$

$x \approx 15.1°$

2. $\langle -3, 2 \rangle \cdot \langle 4, 6 \rangle$

$-3(4) + 2(6) = 0$

Perpendicular

3. $\langle -5, 3 \rangle \cdot \langle 2, -3 \rangle$

$-5(2) + 3(-3) = -19$

$-\frac{3}{5} \quad -\frac{3}{2}$ Neither

$\cos x = \frac{-19}{\sqrt{34}\sqrt{13}}$

$x \approx 154.65°$

Lesson 8-6 *(Pages 520–525)*

Write the parametric equations of the line that passes through point P and is parallel to the given vector.

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

$x = 2 + t$

$y = 3$

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

$x = -1 + 5t$

$y = -4 + 2t$

Write the parametric equations of the line that passes through point P and is orthogonal to the given vector.

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

$\perp \langle 4, 2 \rangle$

$x = -3 + 4t$

$y = 6 + 2t$

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

$\perp \langle 1, 0 \rangle$

$x = 3 + t$

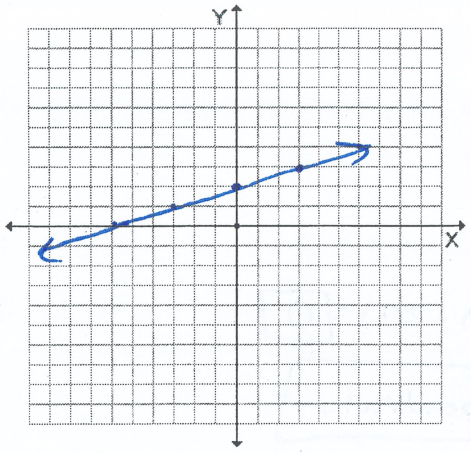
$y = 0$

Graph the line represented by the parametric equations. Then write an equation in point-slope form.

5. $x = 3t$
$y = 2 + t$

(0, 2)

<3, 1>

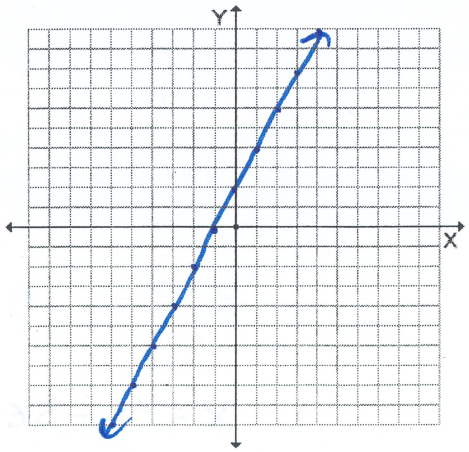


$y - 2 = \frac{1}{3}(x)$

6. $x = -1 + 2t$
$y = 4t$

(-1, 0)

<2, 4>

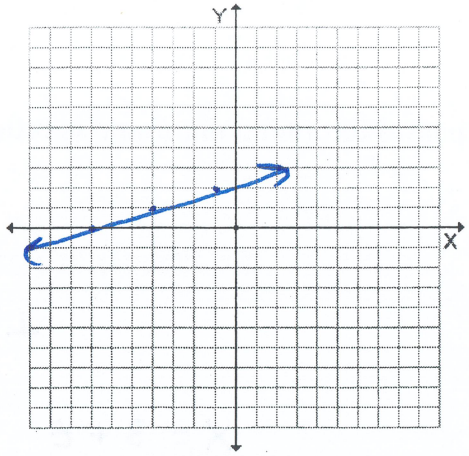


$y = 2(x + 1)$

7. $x = 3t - 10$
$y = t - 1$

(-10, -1)

<3, 1>



$y + 1 = \frac{1}{3}(x + 10)$