Section 8.2 pg 443

7. $A(-3,5)$ $B(-2,4)$

$\vec{AB} = (1,-1) \rightarrow \vec{d} = (1,-1)$

$\therefore \vec{n} = (1,1)$

$x + y + C = 0$

sub in $(-3,5)$

$-3 + 5 + C = 0$

$C = -2$

$\boxed{x + y - 2 = 0}$

note you can also use slope formula and $y = mx + b$...

8. $2x - 4y + 7 = 0$

$\vec{n}_1 = (2,-4)$ or $\vec{n}_1 = (1,-2)$

If our line is $\perp$ its $\vec{n}_2 = (2,1)$

$(\vec{n}_1 \cdot \vec{n}_2 = 0)$

$2x+y+c=0$

sub in $(7,2)$

$2(7)+2+c=0$

$16+c=0$

$c=-16$

$\boxed{2x+y-16=0}$

9 b) $x=3-t, y=-2-4t$

$\vec{d}=(-1,-4)$ or $\vec{n}=(4,-1)$

since $\vec{d}\cdot\vec{n}=0$

$4x-y+c=0$

sub in point $(3,-2)$

$4(3)+2+c=0$

$14+c=0$

$c=-14$

$\boxed{4x-y-14=0}$

10. a) $(x,y) = (3,6) + t(2,-5)$

$(x,y) = (-3,4) - t(-4,-1)$

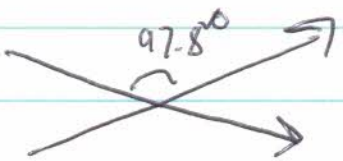
$\vec{d_1} = (2,-5) \quad \vec{d_2} = (-4,-1)$

$$\cos\theta = \frac{\vec{d_1} \cdot \vec{d_2}}{|\vec{d_1}|\,|\vec{d_2}|}$$

$$\cos\theta = \frac{(2,-5)\cdot(-4,-1)}{\sqrt{2^2+(-5)^2}\,\sqrt{(-4)^2+(-1)^2}}$$

$$\cos\theta = \frac{-3}{\sqrt{29}\,\sqrt{17}}$$

$\theta \doteq 97.8^\circ$ (not acute)



acute angle is

$180 - 97.8^\circ$

$\boxed{= 82.2^\circ}$