1) Equation of the line // to $y=\frac{1}{3}x+10$ through $(3,-1)$

Slope $=\frac{1}{3}$, $-1=\frac{1}{3}(3)+b$

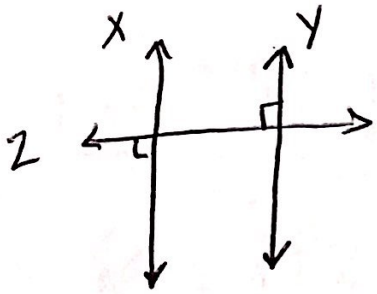
$-1=1+b$

$-1 \quad -1$

$-2=b$

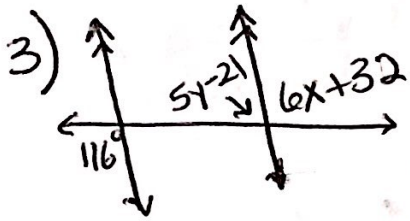
$\boxed{y=\frac{1}{3}x-2}$

2) What lines are //?



$\boxed{x // y}$

3)



$116=6x+32$

$-32 \quad -32$

$\frac{84}{6}=\frac{6x}{6}$

$\boxed{x=14}$

$180-116=64$

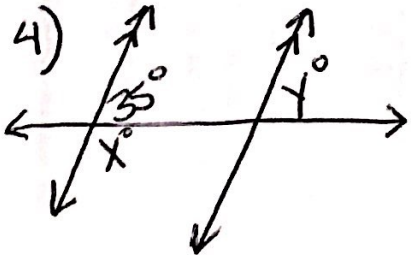
$64=5y-21$

$+21 \quad +21$

$\frac{85}{5}=\frac{5y}{5}$

$\boxed{y=17}$

4)



$y=35$

$x=145$

5) Equation of line ⊥ to $y=-2x+8$ through $(6,-1)$

Slope $=\frac{1}{2}$

$-1=\frac{1}{2}(6)+b$

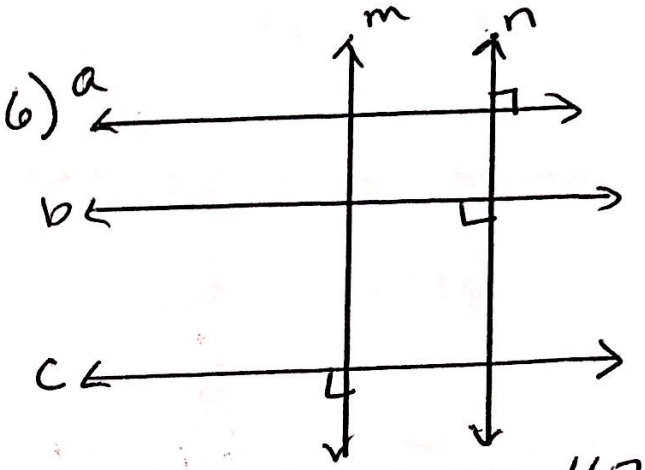
$-1=3+b$

$-3 \quad -3$

$-4=b$

$\boxed{y=\frac{1}{2}x-4}$

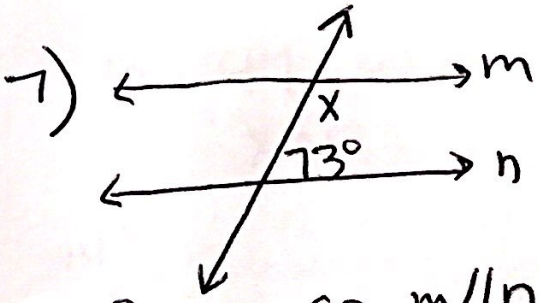
6)



What lines are //?

$\boxed{a // b}$

7)



find x so m//n

$180-73=107°$

$\boxed{x=107}$

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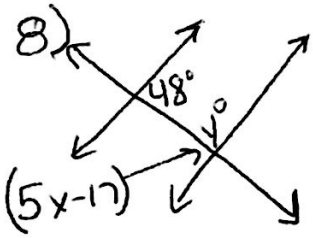
8)



$y = 180 - 48 = \boxed{132°}$

$5x - 17 = 48$
$+17 \quad +17$

$\frac{5x}{5} = \frac{65}{5}$

$\boxed{x = 13}$

9) ⊥, //, neither?

$-2x + 4y = 24$
$+2x \quad +2x$

$\frac{4y}{4} = \frac{2x}{4} + \frac{24}{4}$

$y = \frac{1}{2}x + 6$

$6x + 3y = -12$
$-6x \quad -6x$

$\frac{3y}{3} = \frac{-6x}{3} - \frac{12}{3}$

$y = -2x - 4$

$\boxed{\text{perpendicular}}$

15) slope = 3 through (2,0)

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

$\boxed{y = 3x - 6}$

10) $3x + 2x + 20 = 180$
$5x + 20 = 180$
$-20 \quad -20$

$\frac{5x}{5} = \frac{160}{5}$

$\boxed{x = 32}$

11) $\frac{2y}{2} = \frac{58}{2}$

$\boxed{y = 29}$

$180 - 58 = 122$
$2x = 122$

$\boxed{x = 61}$

12) slope $= -\frac{1}{4}$ through (8,2)

$2 = -\frac{1}{4}(8) + b$

$2 = -2 + b$
$+2 \quad +2$

$b = 4$

$\boxed{y = -\frac{1}{4}x + 4}$

13) $147 = x + 14$
$x = 133$

14) -6

16) $7x - 11 = 4x + 58$
$-4x \quad +11 \quad -4x \quad +11$

$\frac{3x}{3} = \frac{69}{3}$

$\boxed{x = 23}$

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