$SE(\bar{Y}) = S_Y / \sqrt{n}$

$18.14 / \sqrt{200}$

$18.14 / 14.14 = 1.28$

$SE(\bar{Y}) = 1.28$

$\bar{Y} = \$22.04$

$S_Y = \$18.14$

$H_0: E(Y) = \mu_{Y,20}$

$H_a: E(Y) \neq \mu_{Y,20}$

$$t = \bar{Y} - \mu_{r,\phi} \,/\, SE(\bar{Y})$$

$$t = 22.64 - 20 / 1.28$$

$$2.64 / 1.28 = 2.06$$

$$\boxed{t = 2.06}$$

$$SE(\bar{Y}) = 1.28$$

$$\bar{Y} = 22.64$$

$$S_Y = 19.14$$

$$H_0 : E(Y) = \mu_{r,20}$$

$$H_a : E(Y) \neq \mu_{r,20}$$

$t = 2.060$

$P\text{-val} = 2\Phi(-|t|)$

$2\Phi(-|2.06|)$

Normal Distribution table

$2 * (0.0197)$

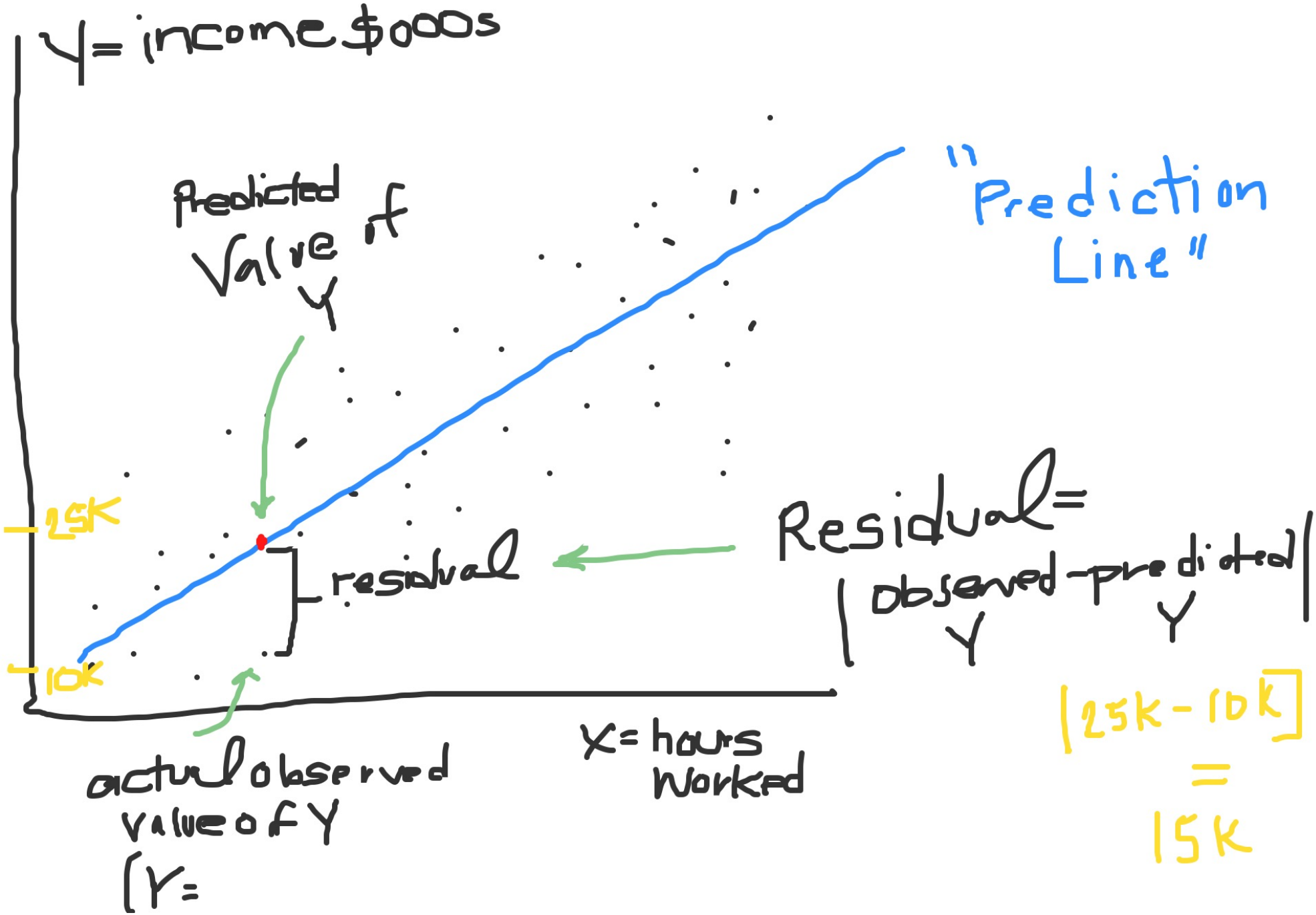
$= 0.0394$

$H_0: E(Y) = \mu_{Y,20}$

$H_a: E(Y) \neq \mu_{Y,20}$

$P\text{-val} = 0.0394$

$P\text{-val } 0.0394 < (\alpha = 0.05) \Rightarrow$ Reject H_0


Y= income $000s
"Prediction Line"
Predicted Value of Y
25K
residual
10K
Residual= |observed Y - predicted Y|
|25K - 10K| = 15K
actual observed value of Y (Y=
X= hours Worked