المسئلة

For a sprint of 6 requirements, only 4 are produced by 3 developers in 3 months as 6 Kloc written by each. However, the test team detects 150 bugs out of 300 by checking 5 Kloc of code, which takes an extra month to solve.

استخراج المعطيات

kLoc produced = 6 kloc , num of monthes = 3 , defacts detected = 150 , total defacts = 300

module size = num of items = 3*6 = 18

initial req = 4 , total req = 6 , items covered =5 , Effort for fizing = 1 , total Effort = 4

القوانين

$$Programmer\ Productivity = \frac{LOC\ produced}{Person\ months\ of\ effort}$$

$$Module\ Defect\ Density = \frac{Number\ of\ defects}{Module\ size}$$

$$Defect\ Detection\ Efficiency = \frac{Number\ of\ defects\ detected}{Total\ number\ of\ defects}$$

$$Requirement\ Stability = \frac{Number\ of\ initial\ requirements}{Total\ number\ of\ requirements}$$

$$Test\ Effectiveness\ Ratio = \frac{Number\ of\ items\ covered}{Total\ number\ of\ items}$$

$$System\ spoilage = \frac{Effort\ spent\ for\ fixing\ faults}{Total\ project\ effort}$$

الحل

1. Programmer productivity = 6 KLOC / 3 months = 2 KLOC/month
2. Defects Density = 300/18
3. Requirement stability = (Completed requirements / Total requirements) * 100%
4. Requirement stability = (4 / 6) * 100% = 66.67%
5. Test effective ratio = 5/18.
6. Detection efficiency = 150 /300
7. System spoilage = 1/4