

**Barem de corectare AH Uman Clasa a X-a, 2013**

1) a)  $(2^x - 3)^2 - 10 = 4^x - 6 \cdot 2^x - 1$  .....(2p)

b)  $f(1) = f(2)$ ,  $f$  nu este injectivă.....(1p)

$Imf = [-10, +\infty)$ ,  $f$  nu este surjectivă.....(1p)

c)  $(2^x - 3)^2 = 25 \Rightarrow 2^x - 3 = 5, 2^x - 3 = -5$  .....(1p)

$2^x = 8 \Rightarrow x = 3$  .....(1p)

$2^x = -2 \Rightarrow x \in \emptyset$  .....(1p)

2) a)  $D = [0, 1] \setminus \left\{ \frac{1}{2} \right\}$  .....(2p)

b) Demonstrarea relației.....(3p)

c)  $E\left(\frac{3}{4}\right) = 2$  .....(2p)

3)  $a = \frac{\log_{16} 100}{\log_{16} 25} \log_{16} 25 - 2 \log_{16} 5$  .....(2p)

$a = \log_{16} 100 - \log_{16} 25$  .....(2p)

$a = \log_{16} \frac{100}{25} = \log_{16} 4$  .....(2p)

$a = \frac{1}{2} \in Q$  .....(1p)

4)  $132 \cdot e^{-0,07t} = 66$  .....(1p)

$e^{-0,07t} = \frac{1}{2}$  .....(2p)

$-0,07t = -\ln 2$  .....(3p)

$t = 10$  minute.....(1p)