

Homework 3 Solutions

1 a) $(5059-5458)/5458 = -7.3\%$

b) $(5017-5458)/5458 = -8.1\%$

c) $(4878-5017)/5017 = -2.8\%$

d) $(4613-4878)/4878 = -5.4\%$

2 a) $(5059-5458)/-1 = -399$

b) $(5017-5458)/4 = -110.25$

c) $(5017-4878)/-3 = -46.3$

d) $(4878-4613)/-2 = -132.5$

3 $4613-5042 = -429$. If this trend continued then in 2012 there would be $4613-2*(-429) = 3755$ home runs. This isn't accurate because the average rate of changes at various times in question number 2, aren't close to -429.

4. $(89-128.2)/128.2 = -30.6\%$

$(96.3-113.3)/113.3 = -15\%$

5. $(96.3-113.3)/5 = -3.4$. So $113+3(-3.4) = 103.1$

6. $89+17*(-3.4) = 31.2$ I am not sure whether it is safe to extrapolate this far.

7. $p*1.137=91$ so $p=91/1.137 = 80\%$ To check, $(91-80)/80 = .137$

8. No for example if you start with \$100 and add 5% to the \$100 you have \$105. Then $105 - 5\%$ of $105 = 0.95*105 = \$99.75$

9. $(2890-2546)/5 = 68.8$ $2890+68.8=2958.8$ in 2016 and $2890 + 68.5*5 = 3232.5$ in 2020

10 $(\text{amount}*1.087)*1.15 = 30$ so the amount is $30/(1.15*1.087) = \$24$