**Chapter 1: Measuring Productivity**

Chuck Sox makes wooden boxes in which to ship motorcycles. Chuck and his three employees invest a total of 40 hours per day making the 120 boxes.

1. What is their productivity?
2. Chuck and his employees have discussed redesigning the process to improve efficiency. If they can increase the rate to 125 per day, what will be their new productivity?
3. What will be their unit increase in productivity per hour?
4. What will be their percentage change in productivity?

**Solution**

**Part A:**

Productivity is measured by output divided input. In this case the output is the 120 boxes produced each day, and the input is the labor input of 40 hours per day.

|  |  |
| --- | --- |
| 120 boxes / 40 hours per day | |
| =120/40  3 is the productivity |  |

**Part B:**

We use the same formula but this time the output is 125

|  |  |
| --- | --- |
| 125 boxes / 40 hours | |
| =125/40  3.125 is the productivity  We can see an increase! |  |

**Part C:**

The unit increase per hour is the old productivity rate subtracted from the new productivity rate

3.125 – 3  
=0.125 boxes per hour increase

**Part D:**

Using basic algebra we can find the percentage change in productivity, using the difference between the new and original productivity rate, then divide that number by the original productivity rate.

Difference between new and old: 0.125  
Original rate: 3  
=0.125/3   
= 0.0416 or 4.16% increase in productivity!