# DPMO Calculation

1. Consider a cell phone manufacturer who wants to calculate the six sigma level of its manufacturing process. For a given period, the manufacturer makes 83,934 cell phones. The manufacturer is required to perform eight checks to test the quality of its products. During testing phase, 3,432 of the cell phones were rejected.

DPMO=5111.15

2. Out of 730 modules in a software program, 18 bugs were found when 4 critical check points were tested. What is the quality level in sigma units for this process? DPMO-6164.38 and sigma units is between 3.9 to 4

3. 500 health reports from a diagnostic laboratory were inspected for 5 different characteristics before dispatch. We observed 224 defects. What is the sigma level? DPMO=200000 sigma level-2.3 to 2.4

4. Phone calls are recorded at a call Centre and later evaluated. A sample of 200 calls are heard by the quality representatives and evaluated based on a Call Quality checklist. There are 14 opportunities for error in each call. 284 defects were observed in the sample of 200 calls. What is the sigma level? DPMO 101428.6 and sigma level is 2.3 to 2.4

5. A project is focused on a billing process. The team wants to have correct bills sent to the customer. They have defined one opportunity for this process - either the bill is correct or not. All of the bills produced are the same in terms of complexity. The team took a sample of 250 bills and found 60 defects.

   DPMO 240000 and sigma level 2.2 to 2.3

6. Johnny's T's, a custom T-shirt company, has discovered some problems with a few of their recent orders. For every order, the company estimates there are 3 opportunities for defects to occur: a typo in the logo, incorrect coloration or general damage. They pull aside a sample of 200 T-shirts to inspect & find 26 total defects. Compute the DPMO and determine the sigma level. DPMO-4333.3

Sigma-4.1to4.2 to

7. XYZ Brake Pads Inc. produces millions of brake pads for a variety of vehicles each year. Recently, customers began reporting to their mechanics that their new brakes feel softer than usual, & mechanics informed XYZ that their inspection of the pads noted unusual dents. XYZ began a process improvement audit to discover the extent of the issue by using a sample of 1,000 brake pads.

Their investigation found there were 6 opportunities for the dents to occur throughout the production process because of different machines being used. The audit turned up 450 pads with abnormal dents in the sample among the company's manufacturing plants.

Using the formula, the company calculated that there were 75,000 opportunities for their brake pads to have abnormal dents. The company issued a recall to correct the problem nationwide

DPMO=75000

Sigma level 2.9 to 3