Proportion data:

Eyeglassomatic manufactures eyeglasses for different retailers. They test to see how many defective lenses they made in a given time period. Out of 603,945 eyeglasses created, they had 65,996 defective lenses. Looking at the type of defects, they found in a three-month time period that out of 34,641 defective lenses, 5865 were due to scratches. Are there more defectives from scratches than from all other causes?

Pareto chart

Eyeglassomatic manufactures eyeglasses for different retailers. They test to see how many defective lenses they made the time period of January 1 to March 31. The table gives the defect and the number of defects. Draw a Pareto chart of the data and then describe what this tells you about what causes the most defects.

|  |  |
| --- | --- |
| Defect type | Number of defects |
| Scratch | 5865 |
| Right shaped – small | 4613 |
| Flaked | 1992 |
| Wrong axis | 1838 |
| Chamfer wrong | 1596 |
| Crazing, cracks | 1546 |
| Wrong shape | 1485 |
| Wrong PD | 1398 |
| Spots and bubbles | 1371 |
| Wrong height | 1130 |
| Right shape – big | 1105 |
| Lost in lab | 976 |
| Spots/bubble – intern | 976 |

Eyeglassomatic manufactures eyeglasses for different retailers. They test to see how many defective lenses they made in the time period of November 2009. Looking at the type of defects, they found that out of 13,236 defective lenses, 2103 were due to scratches. In the period of March 2010 there were (1737 out of 10288) 16.9% defective lenses due to scratches. Were there more defects due to scratches in November 2009 as opposed to March of 2010?

Eyeglassomatic manufactures eyeglasses for different retailers. During the month of March 2010, they looked at the number of defects that were caused by the fit of the lens on the person, the edge of the lens being chipped, the uncut glass of the lens having the defect, and receiving ground lenses from an outsourced supplier. They found that 36080 of the defects were due to fit, 15789 were due to the edge, 1058 were due to the uncut glass, and 35269 were from an outsourced supplier. Make a pie chart of this data.

Eyeglassomatic manufactures eyeglasses for different retailers. They test to see how many defective lenses they made in the time period of March 2010. The company looked to see how many defects were logged by Max. He logged 584 defects out of the total 1433 defects logged. Find the 95% confidence interval for the proportion of defects that he logs in a given month. Given that there are 80 people who manufacture glasses in this month, is there an issue with the number of defects that Max logged? What would you do as an employer?

Eyeglassomatic manufactures eyeglasses for different retailers. The number of days it takes to manufacture an eyeglass and the relative frequency of glasses that take the number of days is in the table. Draw a histogram.

|  |  |
| --- | --- |
| Number of days | Relative Frequency |
| 1 | 24.9 |
| 2 | 10.8 |
| 3 | 9.1 |
| 4 | 12.3 |
| 5 | 13.3 |
| 6 | 11.4 |
| 7 | 7.0 |
| 8 | 3.8 |
| 9 | 1.9 |
| 10 | 1.3 |
| 11 | 1.0 |
| 12 | 0.8 |
| 13 | 0.6 |
| 14 | 0.4 |
| 15 | 0.2 |
| 16 | 0.2 |
| 17 | 0.1 |
| 18 | 0.1 |

Eyeglassomatic manufactures eyeglasses for different retailers. The number of days it takes to manufacture an eyeglass and the relative frequency of glasses that take the number of days is in the table. Argue it is a probability distribution, find the mean and standard deviation. Find probability that a lens will take more than 16 days to make a lens. Is it unusual for a lens to take 16 days to make?

|  |  |
| --- | --- |
| Number of days | Relative Frequency |
| 1 | 24.9 |
| 2 | 10.8 |
| 3 | 9.1 |
| 4 | 12.3 |
| 5 | 13.3 |
| 6 | 11.4 |
| 7 | 7.0 |
| 8 | 3.8 |
| 9 | 1.9 |
| 10 | 1.3 |
| 11 | 1.0 |
| 12 | 0.8 |
| 13 | 0.6 |
| 14 | 0.4 |
| 15 | 0.2 |
| 16 | 0.2 |
| 17 | 0.1 |
| 18 | 0.1 |

Eyeglassomatic manufactures eyeglasses for different retailers. They grind 18872 lenses and put them in the frames, put multicoats (such as tinting and scratch resistance) on 12105 lenses and frames, received the components and assemble 4333 glasses from other sources, they make the frames and put the lenses in from other sources of 25880 glasses, and they receive 26991 finished glasses from another source. Lastly, they had 1508 glasses that they did not record where they came from. Make a bar chart and a pie chart of this data.

Print-o-Matic

Salary data:

|  |  |
| --- | --- |
| Employee | Salary |
| CEO | 272,500 |
| Driver | 58,456 |
| Driver/all arounder | 57,380 |
| CD74 | 100,702 |
| CD74 | 109,739 |
| CD74 | 60,679 |
| CD74 | 57,380 |
| CD74 | 100,702 |
| CD74 | 93,243 |
| CD74 | 61,970 |
| CD74 | 57,380 |
| Embellisher | 73,877 |
| Folder | 65,270 |
| GTO | 74,235 |
| GTO | 75,311 |
| GTO | 74,953 |
| Handwork | 52,718 |
| Horizon | 76,029 |
| ITEK | 65,987 |
| ITEK | 64,553 |
| Mgmt | 108,448 |
| Mgmt | 97,905 |
| Platens | 69,573 |
| Polar | 75,526 |
| Polar | 74,594 |
| Pre Press Manager | 108,448 |
| Pre Press Manager/ IT | 98,837 |
| Pre Press/ Graphic Artist | 87,505 |
| Pre Press/ Graphic Artist | 75,311 |
| Designer | 90,090 |
| Sales | 110,457 |
| Sales | 109,739 |
| Sales | 90,374 |
| Sales | 90,374 |
| Sales | 82,771 |
| Administration | 66,346 |