

Homework assignment 3A

1. A dental supplies distributor ships a customer 50 boxes of product A, 30 boxes of B, 60 boxes of C, and 20 boxes of D. The unit shipping costs (dollars per box) for the four products are \$5, \$2, \$4, and \$10, respectively. What is the weighted mean for shipping cost per unit?
2. The 2007 top-grossing feature film was Spiderman 3, a product that brought in \$336.5 million at the box office. The gross receipts for this and the rest of the top- 20 feature films of that year are shown below. Determine the mean and median for these data. Is there a mode? If so, what is its numerical value?

\$336.5 , \$322.7 , \$319.2 , \$309.4 , \$292.0 , \$256.4 , \$227.5 , \$219.5 ,
\$217.3 , \$210.6 , \$206.4 , \$183.1 , \$168.3 , \$148.8 , \$143.5 , \$140.1 ,
\$134.5 , \$131.9 , \$130.2 , \$127.8

3. The table below documents the maximum speeds (in mph) for a sample of animals. Based on data in the table, determine:
 - The average maximum speed.
 - The median maximum speed.
 - The mode maximum speed.
 - The range of maximum speed.
 - The mean absolute deviation of maximum speed.
 - The variance of maximum speed.
 - The standard deviation of the maximum speed.
 - Let z represents standardized maximum speed data. Calculate z for each animal, and show that its mean $\bar{z} = 0$ and that its standard deviation of $s_z = 1$

| Animal | Maximum Speed |
|----------------|---------------|
| Cheetah | 70 |
| Antelope | 61 |
| Wildebeest | 50 |
| Lion | 50 |
| Coyote | 43 |
| Donkey | 40 |
| Giraffe | 32 |
| Wart hog | 30 |
| Deer | 30 |
| Bear | 30 |
| Cat | 30 |
| Human | 27.89 |
| Elephant | 25 |
| Black mamba | 20 |
| Squirrel | 12 |
| Spider | 1.17 |
| Giant tortoise | 0.17 |
| Garden snail | 0.03 |