

Standard Score Problems

Assuming a population mean of 400 and a population standard deviation of 50 for GRE scores:

1. What percentage of the student population has GRE scores greater than 450?
2. What percentage of the student population has GRE scores greater than 480?
3. What percentage of the student population has GRE scores lower than 320?
4. What percentage of the student population has GRE scores between 300 and 500?
5. What percentage of the student population has GRE scores between 250 and 550?
6. What percentage of the student population has GRE scores between 380 and 560?

Answers

1. What percentage of the student population has GRE scores greater than 450?

$$z = (450-400)/50 = 1.0$$
$$\text{Percentage} = 15.87$$

2. What percentage of the student population has GRE scores greater than 480?

$$z = (480-400)/50 = 1.60$$
$$\text{Percentage} = 5.48$$

3. What percentage of the student population has GRE scores lower than 320?

$$z = (320-400)/50 = -1.6$$
$$\text{Percentage} = 5.48$$

4. What percentage of the student population has GRE scores between 300 and 500?

$$z_1 = (500-400)/50 = 2.0$$
$$\text{Percentage 1} = 47.72$$
$$z_2 = (300-400)/50 = -2.0$$
$$\text{Percentage 1} = 47.72$$
$$\text{Percentage} = 47.72 + 47.72 = 95.44$$

5. What percentage of the student population has GRE scores between 250 and 550?

$$z_1 = (250-400)/50 = -3.0$$
$$\text{Percentage 1} = 49.87$$
$$z_2 = (550-400)/50 = 3.0$$
$$\text{Percentage 2} = 49.87$$
$$\text{Percentage} = 49.87 + 49.87 = 99.74$$

6. What percentage of the student population has GRE scores between 380 and 560?

$$z_1 = (380-400)/50 = -0.4$$
$$\text{Percentage 1} = 15.54$$
$$z_2 = (560-400)/50 = 3.2$$
$$\text{Percentage 2} = 49.93$$
$$\text{Percentage} = 15.54 + 49.93 = 65.47$$