Practice Problem Solutions

1) z = 1.28. Area beyond = **.1003**

2) z = .47. Area beyond = **.3192**

3) z = 1.45. Area beyond = **.0735**

4) z = - .38. Area beyond = **.3520**

5) z = - 1.85. Area beyond = **.0322**

6) z = 2.04 Area between mean and z = **.4793**

7) z = 1.66 Area between mean and z = **.4515**

8) z = 0 Area between mean and z = **0**

9) z = -.89 Area between mean and z = **.3133**

10) z = - 1.35 Area between mean and z = **.4115**

11) What proportion of people set the rods *farther* than 125 millimeters apart?

Column 3, Area beyond the mean is .1056.

12) What proportion of people set the rods *farther* than 100 millimeters apart?

Since 100 is the mean, the answer .50.

13) What proportion of people set the rods between 90 and 100 millimeters apart?

$$z = \frac{90 - 100}{20} = .5$$ **.1915 Columns 2**

14) What proportion of people set the rods less than 82 millimeters apart?

$$z = \frac{82 - 100}{20} = .9$$ **.1841 Column 3**

15) What is the 90th percentile distance?

Divide 90%/100 = .90 Enter Table P and find the z score. Column 1 is .90 and it corresponds to z = 1.28.

$X = \mu + (z \cdot \sigma)$ **= 100 + (1.28 ·20) = 125.6 millimeters**

16) What is the 45th percentile distance?

Divide 45%/100 = .45 Enter Table P and find the z score. Column 3 is .45 and it correspondsto z = .1257. Because it is below the mean it is - .1257.

$X = \mu + (z \cdot \sigma)$ **= 100 + (-.1257 ·20) = 97.486 millimeters.**