Honors Statistics   Name_____

5.3 Finding Probabilities   Period_____Date_____

1.   The weights of adult male rhesus monkeys are normally distributed, with a mean of 15 pounds and a standard deviation of 3 pounds. A rhesus monkey is randomly selected. Find the probability that the monkey's weight is

a.   less than 13 pounds
b.   is between 13 and 17 pounds
c.   is more than 17 pounds
d.   more than 14 pounds

2.   When robin eggs are weighed, it turns out that they vary according to approximately the normal distribution with a mean of 17.5 mg and standard deviation of 3.5 mg. What proportion of robin eggs weigh

a.   less than 15 mg
b.   between 10 mg and 25 mg
c.   more than 24,5 mg

3.   GPA's of a certain group of freshman biology majors are normally distributed with a mean of 2.87 and standard deviation of 0.34.

a.   What proportion of biology majors have a GPA above 3.5
b.   Students are thrown out of the school if their GPA falls below 2.0. What proportion of freshman biology majors are thrown out?

4.   Healthy 10 week old kittens have an average weight of 24.5 oz with a standard deviation of 5.25. The distribution is approximately normal.

a.   A kitten is designated as dangerously underweight when, at 10 weeks, it weighs less than 10 oz. Assuming the population is normally distributed, what proportion of healthy kittens will be designated as dangerously underweight?
b.   What proportion of kittens weight more than 33 oz?

5.   Maple tree diameters in a forest area are normally distributed with a mean of 10 in and standard deviation of 2.2 in. Find the proportion of trees having a diameter greater than 15 inches.

6.   The mean cholesterol level in children is 175 mg/dL with standard deviation of 35 mg/dL. Assume this level is normally distributed. What proportion of children have a cholesterol level above 200 mg/dL?

7.   At two years of age, sardines inhabiting Japanese waters have a length distribution that is approximately normal with mean 20.20 cm and standard deviation 0.65 cm. What proportion of these sardines are between 19.0 and 21.0 cm long?