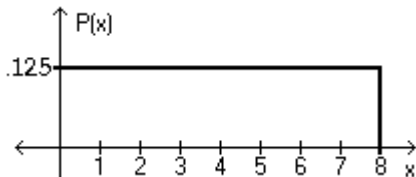# Chapter 6 Worksheet
MATH 160

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
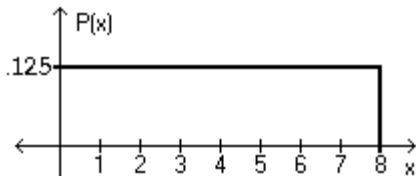
Section 6.2
Using the following uniform density curve, answer the question.

1) What is the probability that the random variable has a value greater than 3.2?

1) _____

Using the following uniform density curve, answer the question.
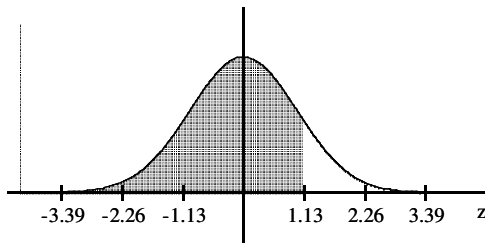

2) What is the probability that the random variable has a value between 4.1 and 7.4?
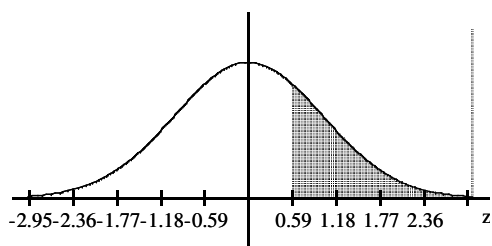
2) _____

Find the area of the shaded region. The graph depicts the standard normal distribution with mean 0 and standard deviation 1.
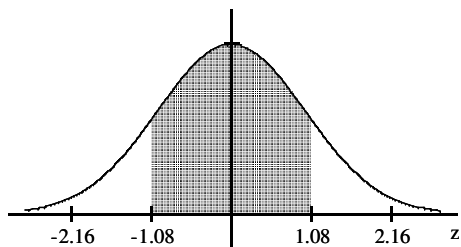
3)

3) _____

4)

4) _____

5)

5) _____
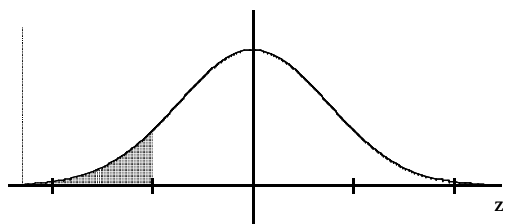
Find the indicated z score. The graph depicts the standard normal distribution with mean 0 and standard deviation 1.
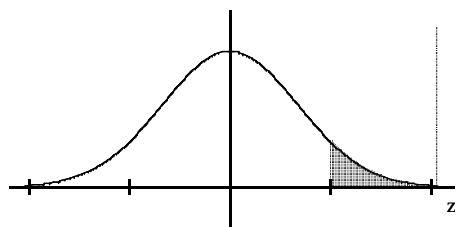
6) Shaded area is 0.0901.

6) _____

7) Shaded area is 0.0694.

7) _____

If z is a standard normal variable, find the probability.

8) The probability that z lies between –2.41 and 0

8) _____

9) The probability that z lies between –1.10 and –0.36

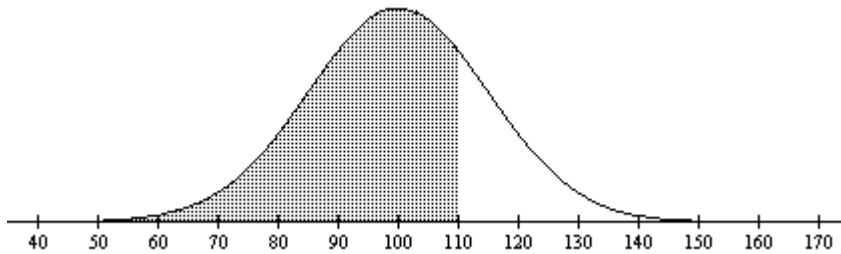9) _____

2

10) P(−0.73 < z < 2.27)   10) _____

Section 6.3
Provide an appropriate response.

11) Find the area of the shaded region. The graph depicts IQ scores of adults, and those scores   11) _____
are normally distributed with a mean of 100 and a standard deviation of 15 (as on the
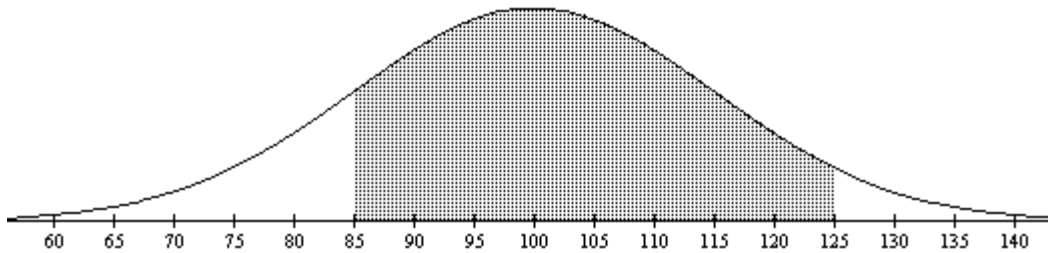Wechsler test).

12) Find the area of the shaded region. The graph depicts IQ scores of adults, and those scores   12) _____
are normally distributed with a mean of 100 and a standard deviation of 15 (as on the
Wechsler test).

Solve the problem. Round to the nearest tenth unless indicated otherwise.

13) In one region, the September energy consumption levels for single–family homes are   13) _____
found to be normally distributed with a mean of 1050 kWh and a standard deviation of 218
kWh. Find P_{45}, which is the consumption level separating the bottom 45% from the top
55%.

14) Assume that women have heights that are normally distributed with a mean of 63.6 inches   14) _____
and a standard deviation of 2.5 inches. Find the value of the quartile Q_3.

Find the indicated probability.

15) The volumes of soda in quart soda bottles are normally distributed with a mean of 32.3 oz   15) _____
and a standard deviation of 1.2 oz. What is the probability that the volume of soda in a
randomly selected bottle will be less than 32 oz?

16) Assume that the weights of quarters are normally distributed with a mean of 5.67 g and a   16) _____
standard deviation 0.070 g. A vending machine will only accept coins weighing between
5.48 g and 5.82 g. What percentage of legal quarters will be rejected?

Section 6.5

Solve the problem.

17) The amount of snowfall falling in a certain mountain range is normally distributed with a   17) _____
mean of 94 inches, and a standard deviation of 14 inches. What is the probability that the
mean annual snowfall during 49 randomly picked years will exceed 96.8 inches?

18) Assume that women's heights are normally distributed with a mean of 63.6 inches and a   18) _____
standard deviation of 2.5 inches. If 90 women are randomly selected, find the probability
that they have a mean height between 62.9 inches and 64.0 inches.

Section 6.7

**The given values are discrete. Use the continuity correction and describe the region of the normal distribution that corresp
the indicated probability.**

19) The probability of more than 53 correct answers   19) _____

20) The probability of at least 48 boys   20) _____

4

21) The probability of fewer than 33 democrats

22) The probability of exactly 47 green marbles

23) The probability of no more than 75 defective CD's

For the binomial distribution with the given values for n and p, state whether or not it is suitable to use the normal distribution as an approximation.

24) n = 22 and p = 0.6

25) n = 19 and p = 0.8

Estimate the indicated probability by using the normal distribution as an approximation to the binomial distribution.

26) A multiple choice test consists of 60 questions. Each question has 4 possible answers of which one is correct. If all answers are random guesses, estimate the probability of getting at least 20% correct.

27) A product is manufactured in batches of 120 and the overall rate of defects is 5%. Estimate the probability that a randomly selected batch contains more than 6 defects.

28) Two percent of hair dryers produced in a certain plant are defective. Estimate the probability that of 10,000 randomly selected hair dryers, exactly 225 are defective.

21) _____

22) _____

23) _____

24) _____

25) _____

26) _____

27) _____

28) _____

1) 0.6000
2) 0.4125
3) 0.8708
4) 0.2776
5) 0.7198
6) −1.34
7) 1.48
8) 0.4920
9) 0.2237
10) 0.7557
11) 0.7486
12) 0.7938
13) 1021.7
14) 65.3 inches
15) 0.4013
16) 1.96%
17) 0.0808
18) 0.9318
19) The area to the right of 53.5
20) The area to the right of 47.5
21) The area to the left of 32.5
22) The area between 46.5 and 47.5
23) The area to the left of 75.5
24) Normal approximation is suitable.
25) Normal approximation is not suitable.
26) 0.8508
27) 0.4168
28) 0.0057