1. Express the given statement as an algebraic expression.

   Five pounds more than four times the weight, w

   The statement "five pounds more than four times the weight, w" can be written algebraically as ____.  
   (Do not factor.)

2. Let x represent one quantity. State what that quantity represents. Express the second quantity in terms of x.

   The length of the rectangle is 5 inches less than 6 times the width.

   What should the quantity x represent?

   ○ width of the rectangle
   ○ length of the rectangle

   Now express the second quantity in terms of x.

   ____ (Do not factor.)

3. Steve and Chris used two different treadmills to exercise. The total distance walked between them was 3.6 miles. State what quantity the variable x represents and express the second quantity in terms of x.

   State what quantity the variable x represents.

   ○ A. the distance Chris walked
   ○ B. the distance Steve walked
   ○ C. 3.6 miles
   ○ D. the distance Steve walked or the distance Chris walked

   Express the second quantity in terms of x.

   ○ A. 3.6 - x
   ○ B. x - 3.6
   ○ C. 3.6 + x
   ○ D. 3.6x
4. Kate rented a truck for a trip. She paid a daily fee of $25 and a mileage fee of 40 cents a mile. Write an expression that represents her total cost when she travels x miles in one day.

Kate's total cost, in terms of x, is □.
(Use integers or decimals for any numbers in the expression.)

5. Eric's electricity use this year decreased by 11% from his electricity use last year, u. Write an expression for his electricity use this year in terms of u.

In terms of u, Eric's electricity use this year is □.

6. Write an equation to represent the given problem.

One number is 9 times another. The sum of the two numbers is 40.

Choose the correct equation below.

- A. \( x + 9 = 40x \)
- B. \( x + 40x = 9 \)
- C. \( x + 9x = 40 \)
- D. \( x + 40 = 9x \)

7. The numbers on two consecutively numbered gym lockers have a sum of 145. What are the locker numbers?

The locker numbers are □.
(Use a comma to separate answers.)

8. A company now has 5100 employees nationwide. It wishes to reduce the number of employees by 250 per year through retirements, until its total employment is 3300. How long will this take?

This will take □ years.
(Type an integer or a decimal.)

9. A man purchased a copy machine for $2200 and a one-year maintenance protection plan that costs 5 cents per copy made. If he spends a total of $3125 in a year, which includes the cost of the machine and the copies made, determine the number of copies he made.

How many copies did he make?

□ copies
10. A golfer has two options for membership in a golf club. A social membership costs $1775 in annual dues. In addition, he would pay a $65 greens fee and a $75 golf cart fee every time he played. A golf membership costs $2425 in annual dues. With this membership, the golfer would only pay a $75 golf cart fee when he played. How many times per year would the golfer need to play golf for the two options to cost the same?

The golfer would need to golf \[ \square \] times per year for the two options to cost the same.

11. MaryBeth works from home as a graphic designer. Recently she raised her hourly rate by 7% to cover increased costs. Her new hourly rate is $22.99. Find MaryBeth's previous hourly rate.

The previous hourly rate was \[ \square \].
(Round to the nearest cent.)

12. A manufacturing plant is running at a deficit. To avoid layoffs, the workers agree on a temporary wage cut of 5%. If the average salary in the plant after the wage cut is $31,400, what was the average salary before the wage cut?

The average salary before the wage cut was \[ \square \].
(Round to two decimal places as needed.)

13. After a 85% reduction, you purchase a new washing machine on sale for $84. What was the original price of the washing machine?

The original price was \[ \square \].

14. After a lady is seated in a restaurant, she realizes that she only has $46.00. If she must pay 7% sales tax and wishes to leave a 10% tip on the total bill (meal plus tax), what is the maximum price of the lunch she can order?

The total price of lunch she can afford is \[ \square \].
(Round to two decimal places as needed.)

15. One angle of a triangle is 10° greater than the smallest angle, and the third angle is 30° less than twice the smallest angle. Find the measures of the three angles.

The measure of the smallest angle is \[ \square \]^\circ.

The measure of the second angle is \[ \square \]^\circ.

The measure of the third angle is \[ \square \]^\circ.
16. The perimeter of a rectangle is 600 yards. What are the dimensions of the rectangle if the length is 80 yards more than the width?

The length is □ yards and the width is □ yards.

17. A rectangular area is to be fenced in along a straight river bank as illustrated. The length of the fenced-in area is to be 3 feet greater than the width, and the total amount of fencing to be used is 81 feet. Find the width and length of the fenced-in area.

The width of the fenced-in area is □ feet.

The length of the fenced-in area is □ feet.

18. Two friends, Jodi Cotton and Abe Mantell, go horseback riding on the same trail in the same direction. Jodi’s horse travels at 4 miles per hour while Abe’s horse travels at a slower pace. After 2 hours they are 4 miles apart. Find the speed at which Abe’s horse is traveling.

Abe’s horse is traveling at the speed of □ miles per hour.

19. Dennis and Chris Reed leave simultaneously from the same point hiking in opposite directions, Dennis walking at 5 miles per hour and Chris at 3 mph. How long can they talk on their walkie-talkies if the walkie-talkies have a 20 mile radius?

□ hrs (Round to one decimal place.)

20. Paul and Donna Petrie invested $20,000, part at 2% simple interest and the rest at 3% simple interest for a period of 1 year. How much did they invest at each rate if their total annual interest from both investments was $530?

The amount invested at 2% is □.

The amount invested at 3% is □.
21. The manager of a store selling tea plans to mix a more expensive tea that costs $7 per pound with a less expensive tea that costs $2 per pound to create a 110-pound blend that will sell for $2.50 per pound. How many pounds of each type of tea are required?

The amount of the more expensive tea required is □ pounds.
(Type an integer or a decimal.)

The amount of the less expensive tea required is □ pounds.
(Type an integer or a decimal.)