

Golf Course Management

Applied Problem Booklet

General Math



Applied Problems Fractions

Express answers in lowest fractional form.

1. Three different weed sprays require these three different amounts per 50 gallons of water: $\frac{7}{8}$ ounce, $\frac{3}{4}$ ounce and $\frac{5}{6}$ ounce. Place the above amounts in order from smallest to largest.
2. If the number of hours that you worked last week were $43\frac{6}{8}$ hours, how many hours were overtime hours? (Write answer in reduced fractional form.)
3. When figuring out your average number of strokes per hole, you find that your average was $4\frac{12}{18}$. Write this average in reduced fractional form.
4. Which fairway is bigger: $\frac{3}{16}$ of an acre or $\frac{1}{5}$ of an acre?
5. If it takes $\frac{2}{3}$ gallon of weed spray for each application, how many applications can be done if you have five gallons of weed spray?
6. If it takes one person $\frac{2}{3}$ of an hour to manicure one green, how long will it take to have 18 greens manicured?

7. From tee to pin is $337\frac{3}{4}$ yards. How many yards is it from the tee to midway between the tee and the pin? (Express as a fraction.)
8. You have worked on inventory for $3\frac{3}{4}$ hours and you figure that you are $\frac{1}{3}$ done. If this estimation is accurate, how long will it take you to do the whole inventory, from start to finish?
9. Settling the books each evening takes about $\frac{3}{4}$ of an hour. How much time is that in a 31-day month?
10. One of the part-time employees worked $32\frac{1}{4}$ hours this past week. If this was for working five days, how many hours did this employee average per day of work? (Express as a fraction.)
11. If it takes $\frac{1}{4}$ ounce of liquid fertilizer mixture per green, how much will it take for nine greens?
12. Determine the total rainfall for the past three days: $\frac{3}{8}$ ", $1\frac{1}{16}$ ", $\frac{3}{4}$ "

13. The following is a weekly time report for four workers:

Name	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Total
Alex	7 1/4	8 1/2			8	8 3/4	9 1/4	
Barb	8	8	7 3/4	7 1/4	8 3/4			
Casey			9 1/4	8	7 3/4	7 1/4	8 3/4	
Donna	8 3/4		8	8		8 3/4	8	
Total								

For the table above:

- Find the totals for each day and each worker. Enter each answer into the table in its proper cell. Write answer as a mixed fraction, not as a decimal.
- If a person earns overtime for time worked in each week past 40 hours, which workers got overtime and how many hours of overtime did each of these people earn?
- Create an Excel© worksheet for this hourly report, having the worksheet find the total for regular hours, overtime hours, and total hours.

14. It took you 43 strokes to complete nine holes. Write the strokes per hole average as a mixed number.

15. For an 18-hole golf course, you make a bi-weekly (once every two weeks) fertilizer application of 1/8 ounce per hole. If your season is 25 weeks long, how many ounces of the application do you need?

Applied Problems Decimals

Express answers in decimal form unless instructed to do otherwise.

1. The shaft of a golf club is $32 \frac{7}{16}$ inches long. Is this more or less than 32.7 inches?
2. In your Nineteenth Hole, you serve hamburgers. You get ten hamburgers per pound.
 - a. Write the average hamburger size in ounces as a decimal amount.
 - b. Write the average hamburger size in ounces in fractional form.
 - c. Write the average hamburger size in ounces, rounded to the nearest $\frac{1}{8}$ th of an ounce.
 - d. If a hamburger weighs 6 ounces, it weighs what portion of a pound, written as a decimal?
3. A “quarter-pounder” has how many ounces of meat? Express “quarter-pounder” as a decimal?
4. Your six rounds at Burning Tree are 77, 81, 79, 88, and 85. What is your average round? (Round answer to nearest tenth.)
5. You need to add 1.4 ounces of Super-Gro® mix per hundred-gallon tankful. How many tankfuls can you make using one gallon of Super-Gro®?

6. If you are a salaried at \$23,125 per year and paid every two weeks (bi-weekly), how much is your gross pay per paycheck? (Round to nearest penny.)

7. Refer back to Fractions, problem 13:

You are to calculate the weekly wage for each of the employees (paying time-and-a-half for overtime). Alex makes \$8.72/hr, Barb makes \$8.85/hr, Casey makes \$7.75/hr and Donna makes \$8.50/hr. [Note: You may want to edit the spreadsheet to calculate the weekly wages.]

8. One inch is $\frac{1}{12}$ of a foot, 2 inches are $\frac{2}{12}$ of a foot, etc. Write the decimal equivalence for each of the following inch measurements (Round to 2 decimal places.)

1"= _____ 2"= _____ 3"= _____ 4"= _____ 5"= _____
6"= _____ 7"= _____ 8"= _____ 9"= _____ 10"= _____
11"= _____ 12"= _____

9. You rented a car for \$19.95 per day and \$0.23 per mile for all miles over 200. If you rented the car for 3 days and drove 257 miles, what is the total cost (before tax)?

10. You are now making \$9.17 per hour and work 244 days per year. If you get a raise of \$0.25 per hour, assuming an eight hour day:

a. How much more will you make in a year?

b. If you normally work about 65 hours overtime in the course of year, how much more will you make in overtime this next year with the pay raise? (Use time and a half for overtime pay rate.)

11. Your Nineteenth Hole has this number of customers last week:

Monday: 57 Tuesday: 62 Wednesday: 85 Thursday: 92
Friday: 162 Saturday: 212 Sunday: 101

What was the average number of customers per day (round to nearest whole number)?

12. You have a Saturday prime rib special. Each prime rib weighs $\frac{3}{4}$ pound. If you expect 65 people to order this special,

a. What is the total number of ounces of prime rib needed?

b. How many pounds are needed? (Note: 16 oz. = 1 lb) (Write any remainder as ounces.)

13. The state income tax on your business is \$500 plus 0.08 times all net profit over \$3,000. What is your state income tax if your net profit was \$67,705.52? (Round to nearest penny.)

14. You have five employees under you. You plan to give a total of \$1,000 (more or less) for end-of-the-year bonuses. Alan, Barb, and Carol deserve equal bonuses. David and Eric deserve equal bonuses but they deserve twice as much money as each of Alan, Barb, and Carol. To the nearest penny, what bonus should each get?

15. You need to carpet a room. The room is rectangular and measures 28 ft x 19.5ft.
- What is the area of this room in square feet? [Area = length x width]
 - There are 9 square feet in every square yard. What is the area of this room in square yards? (Round to nearest tenth.)
 - You have two bids: The first bid is \$28.95/yd² (this includes both the carpeting and the padding) plus \$3.50/yd² for installation. How much would it cost to carpet the room using this bid? (Round to nearest penny.)
 - The second bid is \$25.75/yd² for carpeting plus \$3.85/yd² for padding. The installation is free. How much would it cost to carpet the room using this bid?
16. A barrel partially filled with liquid fertilizer weighs 427.5 pounds. The empty barrel weighs 15 pounds, and the fertilizer weighs 8.25 lb per gallon. How many gallons of fertilizer are in the barrel?
17. One gallon of water weighs approximately eight pounds. A tanker hauls 1.5 tons of water to the golf course. Determine how many gallons of water are in the tanker.

Applied Problems Percents

1. You shot par or better on eleven of the last 18 holes. What percentage of the time were you over par? (Round to nearest tenth.)

2. One of your pro-shop employees makes \$300 (base pay) per week plus 15% commission of weekly sales. If the employee's sales were:

Week 1	\$325.75
Week 2	\$415.97
Week 3	\$392.51
Week 4	\$512.57

- a. What was the employee's gross pay for each of these four weeks? (Round to nearest penny.)

Week 1	
Week 2	
Week 3	
Week 4	

- b. What was the employee's average weekly gross pay? (Round to nearest penny.)

3.
 - a. Last year your pro shop had \$162,487 in sales. This year, it had \$191,588 in sales. What was the percent increase in sales? (Round to nearest tenth.)

 - b. Last year your pro shop had a net profit of \$38,392. This year its net profit was \$36,211. What was the percent decrease in net profit? (Round to nearest tenth.)

4. If a shirt wholesales for \$18 and retails for \$32, what is the percent mark-up? (Round to nearest tenth.)
5. You buy a portable ball washer that lists for \$785 less a 15% discount plus 5% sales tax. What is the purchase price? (Round to nearest penny.)
6. Your organization has a profit sharing plan. If the organization declared a 12% bonus for the year (that is, each person receives an end-of-the-year check for 12% of that person's yearly salary.)
- What would be the bonus on an annual salary of \$18,540 (before the bonus)?
 - If you received a bonus check for \$2,200, find: (Round to nearest penny.)
 - Your yearly salary
 - Your monthly salary
 - If you are an hourly wage employee who works 40 hours/week for 50 weeks, what is your hourly wage?
7. As a salesperson, you earn commission based upon this schedule:
- *15% on your total weekly sales that are less than \$1,000
 - *17.5% on your total weekly sales that are at least \$1,000 but less than \$3,000
 - *20% on your total weekly that are \$3,000 or more

What is the commission earned if your sales for the week are: (Round to nearest penny.)

- \$873.54
- \$1,823.54
- \$5214.56
- How much would your sales have to be for you to earn \$1,000 commission in one week?

8. Your goal is to increase your pro shop sales by 10% per year for the next five years. This year's sales totaled \$72,450. What are the dollar amounts for each of your sales goals for the next five years? (Round to nearest penny.)

9. You need to raise your meal prices by 8%. What is the new price of a steak dinner that is priced at \$11.95? (Round to nearest penny.)

10. At your golf course, green fees accounted for \$122,000 in revenue, the pro shop netted \$38,260 in sales, and the bar/restaurant brought in \$212,000. What percentage did each division contribute to the total amount? (Round to nearest tenth.)

11. You have six greens caretakers on staff. You feel that this is too few, so you hire another greens caretaker. What is the percentage increase in greens staff? (Round to nearest tenth.)

12. Oops, seven greens caretakers are too many, so you let one go. What is the percentage decrease in greens staff? (Round to nearest tenth.)

Applied Problems Measurement

- You are looking at a blue print of a golf course layout with the scale being $1'' = 10'$
 - What is the true length of a scale measurement of 3.75 inches?
 - If the true length from tee to green is 287 yards, what will be the length of the scale measurement?
- Your golf course has gone big time with many foreigners playing your course. You need to convert the yardage into meters. What are the metric equivalents of the following yardages? (Round to nearest meter.)
 - 347 yards: _____
 - 402 yards: _____
 - 184 yards: _____
- You become a major golf broadcaster covering European events for an American audience. However, in Europe, the measurements are all in meters. Translate these metric measurements into equivalent yardages. (Round to the nearest yard.)
 - 121 meters: _____
 - 96.5 meters: _____
 - 101.75 meters: _____
- A room has been measured to be $32' 8 \frac{3}{4}''$ wide by $18' 10 \frac{1}{2}''$. (Round to nearest hundredth.)
 - Translate these measurements into decimal feet: _____
 - Translate these measurements into decimal inches: _____
- What is the cost per ounce of something that costs: (Round to nearest cent.)
 - \$9.25 per quart: _____
 - \$9.25 per pound: _____

6. Your tractor holds 2.75 liters of oil. How many quarts is this? (Round to nearest hundredth.)

7. Gasoline is now costing \$2.04⁹ per gallon. What is this price in dollars per liter?
(Round to nearest penny.)

8. Which is the better price: \$18.15 per kilogram or \$8.25 per pound?

9. One of your guests is from Germany and wants to know the distance (in kilometers) from your golf course to Mayberry. You know that the distance is about 120 miles.

a. How many kilometers is this? (Round to nearest tenth.)

b. You tell your guest that an easy way to convert from miles to kilometers is by multiplying by what common fraction?

c. Then, of course, the easy way to convert from kilometers is by multiplying by what common fraction?

d. Helping your guest out more, you give the following miles per hour in kilometers per hour: (Round to nearest whole number.)

1. 55 mph = _____

2. 30 mph = _____

10. The diffusion rate is 18 grams per liter.
- What is the diffusion rate in ounces per gallon? (Round to nearest hundredth.)
 - What is the diffusion rate in ounces per 100 gallons?
 - What is this diffusion rate in pounds per 100 gallons? (Round to nearest whole number.)
11. You are to spray a chemical driving at the rate of 20 km/h. What is this rate in miles per hour? (Round to nearest whole number.)

Applied Problems Formulas

1. The last time the clubhouse was painted it took 3 people each painting for 12 hours to complete the job. If there are 4 painters working this time, how much time do you expect each person to paint?
2. If it takes you 4 hours to go from your home to Lake Geneva traveling 55 mph, how much time will it take if you travel at 65 mph? (Place your answer in hours and minutes.)
3. This year, at the end-of-the-year party, 335 people ate 111 pounds of prime rib. If you expect 410 people at this year's party, how many pounds of prime rib should you have? (Round to nearest whole number.)
4. At the Country Club Annual banquet, 20 people ate 15 pounds of ham. Assuming the same rate of consumption, how much ham is needed to feed 375 people? (Round to 2 decimal places.)
5. A fertilizer used on the greens must be prepared using three parts concentrated fertilizer for every 28 parts water. How many gallons of water must be added to 24 oz. of concentrate?

6. How much insecticide does 25 acre Cawdor Castle Golf course need if the insecticide treats 50 acres per 100 lb?

7. How much fertilizer does 403 acre Crown Colony Golf course need if the fertilizer treats 1,575 square feet per gallon? (Round to nearest whole number.)

8. Three groundskeepers take 25 hours to prepare a golf course for a tournament. How long would it take five groundskeepers to prepare the golf course?

9. A drawing has a scale indicating $\frac{1}{4}$ " equals 3 miles. If the actual distance is 17 miles, how long would this be in the drawing? (Round to nearest tenth.)

10. On a road map, $\frac{1}{4}$ " represents 8 miles of actual road distance. How many miles apart are two towns that are represented by points $2\frac{1}{8}$ " apart on the map?

Applied Problems Geometry

1. How many cubic yards of concrete are needed to make a sidewalk that is 60 ft long, 30 inches wide and 4 inches thick? (Round to nearest whole number.)

2. How many pounds of grass seed are necessary to seed a rectangular patch 30 feet wide and 40 feet long if one pound of seed will cover 75 square feet?

3. What is the number of square feet of paneling needed to cover the walls of a room that is 38' long, 22' wide and 8' high?

4. You are going to make a circular fishpond with a diameter of 12' 6".
 - a. What is the circumference of the pond in feet? (Round to nearest tenth.)

 - b. What is the area of the pond in square feet? (Round to nearest tenth.)

 - c. If the pond is to be two feet deep, how many cubic yards of dirt must be removed? (Round to nearest tenth.)

 - d. There are approximately 7.48 gallons of water in one cubic foot. Approximately how many gallons of water are needed to fill the pool? (Round to nearest whole gallon.)

 - e. Each gallons of water weighs approximately 8.33 pounds. Approximately, what is the weight of the water in the pool? (Round to nearest pound.)

5. The sides and ends of a circular cylindrical tank are to be painted. If the tank has a diameter of 4' 6" and a length of 8' 4":
- How many square feet must be painted? (Round to nearest whole number.)
 - If one gallon of paint covers 400 square feet and two coats of paint are needed, how many gallons of paint are needed?
6. A grassed area is rectangular shaped with a width of 30' 6" and length of 123'.
- How many gallons of water are needed to water this area to a depth of $\frac{1}{4}$ inch? (Round to nearest whole number.)
 - Find the area in square meters of this grass-covered area. (Round to nearest tenth.)
 - How many liters of water needed to water this area to a depth of 1 cm? (Round to nearest whole number.)
7. Canvas that costs $\$0.009/\text{in}^2$ is used to make golf bags. Find the cost of 400-rectangular pieces of canvas, if each measures 8" x 40".

8. If the circular water fountain in front of the clubhouse has a diameter of 50 inches, find its area in square feet. (Round to nearest tenth.)

9. Mr. Greenjeans is a greens manager who wants to apply fertilizer to a 25.6-acre field with dimensions 0.2 mile by 0.2 mile. Find the area in square miles.

10. How many cubic yards of top soil are needed to cover a 60-foot by 90-foot rectangular area if the topsoil is six inches deep? (Round to nearest whole number.)

11. Laem Chabang International Country Club golf course designed by Jack Nichlaus has a length of 8,285 meters. Convert this length to yards. (Round to nearest whole number.)

Applied Problems Statistics

1. You play the course several times during the summer. Your scores are 86, 84, 89, 88, 81, 89, 82, 79, 85, 82, 91, 86, 84, 83, 79, 81, 80, 77, 78, and 81.
(Round to nearest tenth.)
 - a. What is your mean score? _____
 - b. What is your median score? _____
 - c. What is your mode score? _____
 - d. What is the range of scores? _____
 - e. What is the standard deviation of the scores? _____
 - f. Using the mean and the standard deviation, between what two scores do you expect 68% of your scores to fall?
 - g. How many scores actually fall between these two numbers? What percentage is this?
 - h. Using the mean and the standard deviation, between what two scores do you expect 95% of your scores to fall?
 - i. How many of your scores actually fall between these two numbers? What percentage is this?

Golf Course Management Application Problems Key

Fractions

1. $\frac{3}{4}$, $\frac{5}{6}$, $\frac{7}{8}$
2. $3\frac{3}{4}$
3. $4\frac{2}{3}$
4. $\frac{1}{5}$
5. $7\frac{1}{2}$
6. 12 hours
7. $168\frac{7}{8}$ yds.
8. $11\frac{1}{4}$ hrs.
9. $23\frac{1}{4}$ hrs.
10. $6\frac{9}{20}$
11. $2\frac{1}{4}$
12. $2\frac{3}{16}$ "
13. a. horizontal: 24, $16\frac{1}{2}$, 25, 23
 $\frac{1}{4}$, $24\frac{1}{2}$, $24\frac{3}{4}$, 26
vertical: $41\frac{3}{4}$, $39\frac{3}{4}$, 41, $41\frac{1}{2}$
b. Alex: $1\frac{3}{4}$; Casey: 1; Donna:
 $1\frac{1}{2}$
14. $4\frac{7}{9}$
15. $29\frac{1}{4}$

Decimals

1. less
2. a. 1.6 oz
b. $1\frac{3}{5}$ oz
c. $1\frac{5}{8}$ oz
a. 0.375
3. 4 oz
4. 82
5. 91 100-gal tanks
6. \$889.42
7. Alex: \$371.69; Barb \$351.79;
Casey: \$321.63; Donna \$359.13
8. .08, .17, .25, .33, .42, .50, .58,
.67, .75, .83, .92, 1.00
9. \$72.96
10. a. \$488.00
b. \$24.38
11. 110
12. a. 780 oz.
b. 48 lb. 12 oz.
13. \$5,676.44

14. a. David=Eric=\$285.72;
Alan=Barb=Carol=\$142.86
15. a. 546 sq. ft
b. 60.7 sq yds
c. \$1,969.72
b. \$1,796.72
16. 50 gal
17. 375 gal

Percents

1. 38.9%
2. a. \$348.86; \$362.40; \$358.88;
\$376.89
b. \$361.76
3. a. 17.9%
b. 5.7%
4. 77.8%
5. \$700.61
6. a. \$2,224.80
b. \$18,333.33; \$1,527.78
c. \$9.17
7. a. \$131.03
b. \$319.12
c. \$1,042.95
d. \$5,000
8. \$79,695; \$87,664.50;
\$96,430.95; \$106,074.05;
\$116,681.45
9. \$12.91
10. Greens: 32.8%; Pro Shop:
10.3%; Bar-Rest: 56.9%
11. 16.7%
12. 14.3%

Measurement

1. a. 37.5'
b. 86.1"
2. a. 317 m
b. 367 m
c. 168 m
3. a. 132 yds
b. 106 yds
c. 111 yds
4. a. 32.73' x 18.88'
b. 392.75" x 226.5"

5. a. \$0.29
b. \$0.58
6. 2.91 gt
7. \$0.54/L
8. \$18.15/kg
9. a. 193.2 km
b. 8/5
c. 5/8
d. 89 kph; 48 kph
10. a. 2.41 oz/gal
b. 241 oz/100 gal
c. 15 lb/100 gal
11. 12 mph

Statistics

1. a. 83.3
b. 82.5
c. 81
d. 14
e. 4
f. 79.3 to 87.3
g. 12, 60%
h. 75.3 to 91.3
i. 20, 100%

Formulas

1. 9 hrs.
2. 3 hrs. 23 min.
3. 136 lbs.
4. 281.25 lb
5. 1.75 gal
6. 50 lb
7. 11,146 gal
8. 15 hrs
9. 1.4"
10. 68 mi

Geometry

1. 2 cu. yds.
2. 16 lbs.
3. 960 sq. ft.
4. a. 39.3 ft
b. 122.7 sq. ft
c. 9.1 cu. yds.
d. 1,838 gal
e. 15,311 lbs.
5. a. 150 sq. ft
b. 1 gal.
6. a. 585 gal
b. 348.4 sq. m
c. 3,484 L
7. \$1,152
8. 13.6 sq. ft
9. 0.04 sq. mi
10. 100 cu. yds.
11. 9,065 yds

Golf Course Management Application Packet – Quiz

1. If, on average, it takes one person $\frac{3}{4}$ hours to manicure one green, how long will it take to have 18 greens manicured? (Express answer as a fraction.)
2. From tee to pin is $317\frac{3}{4}$ yards. How many yards is it from the tee to midway between the tee and the pin? (Express answer as a fraction.)
3. A grounds employee puts in the following hours: $6\frac{3}{4}$, 5, $4\frac{1}{2}$, $7\frac{3}{4}$, $8\frac{1}{4}$. Find the total hours worked by this employee. (Express answer as a fraction.)
4. Bulk concentrated fertilizer directions indicate that $\frac{3}{8}$ pound of fertilizer should be mixed with each 100 gallons of water for each application. If the fertilizer comes in a 60-pound bag, how many whole applications can be made?
5. Arrange these numbers from smallest to largest: 0.65, $\frac{5}{8}$, 0.065, 0.62
6. Change this fraction into decimal form without rounding: $\frac{5}{64}$
7. On the first nine holes, your strokes were: 5, 6, 4, 5, 7, 4, 3, 8, and 5.
What is your average number of strokes per hole, rounded to the nearest tenth?

8. How much does someone earn in a week if she works $42\frac{3}{4}$ hours at \$9.25 per hour? All work over 40 hours per week earns overtime, paid at the rate of time-and-a-half.
9. A barrel containing practice golf balls weighs 43 pounds. The empty barrel weighs 18 pounds, and a golf ball weighs 1.6 oz. How many golf balls are in the barrel?
10. One gallon of water weighs approximately eight pounds. A tanker hauls 1.4 tons of water to the golf course. Determine how many gallons of water are in the tanker.
11. You need to carpet a room. The room is rectangular, 32 feet by 18 feet.
- What is the area of this room in square feet?
 - There are 9 square feet in every square yard. What is the area of this room in square yards?
 - You have a bid of \$18.95 per square yard (this includes both the carpeting and the padding) plus \$3.00 per square yard for installation. What is the total cost of this bid? (Answer to nearest penny.)

12. You need to purchase a new all-purpose cart for the golf course. One option is to pay \$8,300.00 cash. The other option is to pay \$2,100.00 down plus \$635.00 per month for one year (12 months.) How much more is the second option?
13. At Pebble Beach, you shot par or under par on 13 of the 18 holes. On what percentage of the holes were you over par? (Round to nearest tenth.)
14. You work for an organization that has a profit sharing plan. If the organization declared a 15% bonus for the year (that is, each person receives an end-of-the-year check equal to 15% of his/her yearly salary) and your bonus was \$2,925.00.
- What is your yearly salary?
 - What is your monthly salary?
 - If you received that bonus and you are an hourly wage employee working for 40 hours per week for 50 weeks, what is your realized hourly wage? (Round to nearest penny.)
15. Two years ago, your pro shop had \$182,500.00 in sales. Last year, it had \$197,200.00 in sales. (Round answers to nearest tenth.)
- What was the percent increase in sales?
 - Although the total sales went up, the profit went down. Two years ago, the profit from sales was \$38,325.00 while the profit from sales last year was \$35,496.00. What was the percent decrease in profits?
16. A polo shirt has a dealer's cost of \$24.00. If the selling price is \$42.00, what is the percent markup based on dealer's cost?

17. As a salesperson, you earn commission based upon this schedule:
- 5% on all of your sales if your sales are \$1000 or less for the week
 - 10% on all of your sales if your sales are more than \$1000 and not more than \$5000 for the week
 - 15% on all of your sales if your sales are more than \$5000 for the week
- What is the commission that you will earn if your sales for the week are:
- a. \$872.45?
 - b. \$4,119.00?
 - c. \$7,834.00?
18. Using two lawn tractors, the greens can be moved in 45 minutes. If three lawn tractors are used, how long will it take?
19. For every fifteen golf carts rented, 40 golfers walk the course. What is the ratio of walkers to golf cart users? (Reduced fraction form.)
20. On a map of a golf course, a scale of 1" = 0.5 mi is shown. The distance between the first green and the third green is $\frac{3}{4}$ " on the map, how far apart are they in miles?
21. At the Country Club Annual banquet, three $1\frac{1}{2}$ pound loaves of bread can be cut into 36 slices. How many $1\frac{1}{2}$ pound loaves will it take if 250 slices are needed? (Round to nearest whole number.)
22. A fertilizer used on the greens must be prepared using five parts concentrated fertilizer for every 16 parts water. How many gallons of water must be added to 100 oz. of concentrate?

23. How much insecticide does 75 acre Quail Point Golf course in Medford, Oregon need if the insecticide treats 50 acres per 100 lb?
24. How much fertilizer does 250 acre Rolling Acres Golf course need if the fertilizer treats 1,575 feet square per gallon? (Round to next whole number.)
25. Four groundskeepers take 30 hours to prepare a golf course for a tournament. How long would it take five groundskeepers to prepare the golf course?
26. During a golf tour to Scotland, you stay at Old Manor Hotel in Lundin Links. The Old Manor Hotel is 26 km from St. Andrews—The Old Course. How far is the hotel from the golf course in miles? (Round to nearest tenth.)
27. How many cubic yards of concrete are necessary to cement a walk, which is 45” wide, 4” thick, and 145 feet long? (Round to nearest tenth.)
28. Khao Kheow Country Club golf course designed by Pete Dye has a length of 6,435 meters. Convert this length to yards. (Round to nearest whole number.)
29. You have a water tank in the shape of a right circular cylinder with a diameter of 8.5 feet and a height of 4.5 feet.
- What is the volume (in cubic feet)? (Round to nearest tenth.)
 - If one cubic foot of water contains 8.33 gallons, how many gallons of water are contained in that water tank? (Round to nearest whole number.)

30. A rectangular room has a width of 18 feet 7.5 inches and a length of 26 feet 8.5 inches. (Round to nearest tenth.)
- What is its perimeter in feet?
 - What is its area (in square feet)?
 - If ceiling paint covers 300 square feet per gallon, how many gallons are needed to cover the ceiling with one coat of paint?
 - If the walls are 8 feet high and wall paint covers 450 square feet per gallon, how many gallons are needed to cover the four walls with one coat of paint (ignore doors and windows)?
31. Vinyl that costs 1.6 cents per square inch is used to make golf bags. Find the cost of 250 rectangular pieces of vinyl canvas, if each measures 7.5 inches x 40 inches.
32. Mr. Greenjeans is a “greens” manager who wants to apply fertilizer to a 40-acre field with dimensions $\frac{1}{4}$ mile by $\frac{1}{4}$ mile. Find the area in square miles. (Round to nearest hundredth.)
33. If a circular shaped water trap on hole number nine has a diameter of 50 feet, find its area in square feet, rounded to nearest tenth.
34. How many cubic yards of topsoil are needed to cover a 75-foot by 105-foot rectangular area if the topsoil is six inches deep? (Round to nearest whole number.)

35. A twenty-four pack of soda costs you \$8.40. How much should you price each can if you want to make of profit of 10 cents per can?
36. A circular area has a diameter of 18 feet 9 inches. (Round to nearest tenth.)
- What is its circumference in feet?
 - What is its area in square feet?
 - If it cost you \$690.00 to have that area sodded, what can you expect to pay to have a circular area with a diameter twice that sodded?
37. You have a \$200,000 certificate of deposit that earns 7.5% simple interest per year. Find the interest earned after 6 years? Use $I = P \cdot R \cdot T$, where I-interest, P-principal, R-interest rate in decimal form and T-time in years.
38. If you had one billion dollars and you gave away a \$1,000 bill every minute, how long before you would go broke? (Round to nearest tenth of a year.)
39. In a certain company, 5 employees earn \$16,000 per year, 3 employees earn \$20,000 per year, and 2 employees earn \$24,000 per year.
- What is the average (mean) annual salary for these employees?
 - What is the median annual salary for these employees?
 - What is the mode annual salary for these employees?

40. The Road Hole (seventeenth) is the most famous hole in golf located at St. Andrews—The Old Course in Scotland. It is 455 yards long, if you were to place standard size golf tees (2 1/8" long) end-to-end spanning the entire seventeenth hole, how many tees would be needed?

41. You buy your pro shop supplies from four sources. The supplier and the amount purchased from that supplier is as follows:

Golf Supplies:	\$36,448.00
American Sport Supply:	\$42,416.00
Wisconsin Sport & Activity:	\$58,123.00
California Golf Supplies:	\$16,012.00

- Find the percentage that each supplier represents of the total purchases. (Round to nearest tenth.)
- Using Excel©, draw a circle graph (pie chart) of this data, showing the actual amounts. [Staple completed, original graph onto packet.]
- Using Excel©, draw a circle graph (pie chart) of this data, this time showing the percentages. [Staple completed, original graph onto packet.]

42. The monthly electric bills for the clubhouse are as follows:

January: \$412	February: \$337	March: \$325
April: \$308	May: \$326	June: \$347
July: \$358	August: \$452	September: \$371
October: \$326	November: \$351	December: \$381

- What is the average monthly cost of the electric bills? (Round to nearest dollar.)
- Using Excel©, draw a bar graph of this data. [Staple completed, original graph onto packet.]
- Using Excel©, draw a line graph of this data. [Staple completed, original graph onto packet.]