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Additional Exercises 7.1

1. At an election, 72 out of every 100 eligible voters turned out to vote. What percent of eligible voters turned out?

Write each percent as a decimal.

2. 5%
3. 3.4%
4. 0.6%
5. 179%
6. 45%

Write each decimal as a percent.

7. 0.49
8. 0.003
9. 0.724
10. 4.6

Write each percent as a fraction or mixed number in simplest form.

11. 24%
12. 1.3%
13. 120%
14. 230%

Write each fraction or mixed number as a percent.

15. $\frac{13}{25}$
16. $\frac{1}{5}$
17. $3\frac{1}{4}$

Write each fraction as a percent. Round to the nearest hundredth percent.

18. $\frac{1}{18}$
19. $\frac{4}{11}$

20. 6.5% of dogs in a community do not have a license. Write this percent as a fraction.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

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Additional Exercises 7.2

Translate each to a proportion. Do not solve.

1. 12% of 42 is what number?
2. What number is 30% of 50?
3. 60% of what number is 18?
4. What percent of 120 is 30?

1. _____
2. _____
3. _____
4. _____

Solve. (Round to the nearest tenth if necessary.)

5. What number is 45% of 360?
6. 30% of 170 is what number?
7. 72 is 80% of what number?
8. 10 is 20% of what number?
9. 50 is what percent of 450?
10. 60 is what percent of 240?
11. 0.2 is 20% of what number?
12. 1.5 is 25% of what number?
13. 20 is 10% of what number?
14. 875 is $8\frac{3}{4}\%$ of what number?
15. 3.2 is what percent of 128?
16. What percent of 45 is 90?
17. What percent of 20 is 12.5?
18. 0.5% of 100 is what number?
19. 150% of what number is 60?
20. 10% of 86 is what number?

5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

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Additional Exercises 7.3

Translate each to an equation. Do not solve.

1. 62% of 80 is what number?
2. What number is 8% of 75?
3. 25% of what number is 40?
4. 7.2 is 15% of what number?
5. 2.5 is what percent of 25?
6. 15 is what percent of 50?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Solve. (Round to the nearest tenth if necessary.)

7. 40% of 80 is what number?
8. What number is 95% of 800?
9. 20 is 25% of what number?
10. 60% of what number is 80?
11. 8 is what percent of 24?
12. 25 is what percent of 50?
13. 15% of 10 is what number?
14. 50 is what percent of 150?
15. 105 is what percent of 2100?
16. 125 is 50% of what number?
17. 110% of 20 is what number?
18. 8.6 is what percent of 86?
19. What percent of 1.2 is 1.8?
20. 230% of what number is 40?

7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

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Additional Exercises 7.4

Solve. Round percents to the nearest tenth if necessary.

1. An inspector found 40 defective batteries during an inspection. If this is 2.5% of the total number of batteries inspected, how many batteries were inspected? 1. _____
2. Judy paid 15% of the purchase price of a \$95,000 home as a down payment. How much did she pay down? 2. _____
3. The Brown family total income is \$4200 per month. Last month they spent \$210 dining out. What percent of their monthly income was spent on dining out? 3. _____
4. On average, 0.5% of the cookies baked by a bakery are discarded. If 210 cookies were discarded during one week, how many were baked? 4. _____
5. Elaine's salary last year was \$40,000. This year she received a 5% raise. What is her salary this year? 5. _____
6. Last year, Mrs. Lutz had 12 piano students. This year she has 16 students. Find the percent increase. 6. _____
7. The average number of customers per day at Bill's Toy Store decreased from 140 to 110. Find the percent decrease. 7. _____
8. The Rocky Valley Motel charges \$120.00 a night during the summer, but \$90.00 a night during the fall. What is the percent decrease? 8. _____
9. The price of a gallon of milk increased from \$3.05 to \$3.68. Find the percent increase. 9. _____
10. With the addition of a new wing, a rural hospital with 150 beds now has 225 beds. Find the percent increase. 10. _____

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Additional Exercises 7.4 (cont.)

11. A bill passed to decrease taxes by 2%. If Sean paid \$280 in taxes last year, what tax will he pay this year if his income remains the same? 11. _____
12. The wholesale cost of a lamp is \$15. If a store has a standard mark-up of 40%, what will be the retail purchase price of the lamp? 12. _____
13. The size of a family's cattle herd was 450 before selling 240 heifers. What was the size of the herd after the sale and what was the percent decrease? 13. _____
14. A salad dressing has 150 mg of sodium per serving. This is 15% of the daily recommended amount of sodium. What is the daily recommended amount of sodium? 14. _____
15. There are 190 calories of fat per 2 tablespoon serving of crunchy peanut butter. 130 of these are from fat. What percentage of the total calories are from fat? 15. _____
16. Find the percent increase if 400 is increased to 500. 16. _____
17. Find the amount of increase and new amount if 45 is increased by 20% 17. _____
18. Find the percent decrease if 150 is decreased to 120. 18. _____
19. Find the new amount if \$84.50 is decreased by 12%. 19. _____
20. A local computer company produces 120 computers per month. If production is increased by 5%, what is now produced monthly? 20. _____

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Additional Exercises 7.5

Solve.

1. If the sales tax rate is 4%, find the sales tax on a \$280 fax machine. 1. _____
2. What is the sales tax on a \$450 television if the sales tax rate is 4%? 2. _____
3. A refrigerator sells for \$625. With a sales tax rate of 6.5%, find the total price. 3. _____
4. A sport-utility vehicle sells for \$20,500. If the sales tax rate is 5%, find the total price. 4. _____
5. Daniel bought shoes for \$80 and a shirt for \$215. Find the total price he paid if the sales tax rate was 5.5%. 5. _____
6. The sales tax is \$32.50 on a desk priced at \$650. Find the sales tax rate. 6. _____
7. The sales tax is \$0.72 on a \$12 purchase. Find the sales tax rate. 7. _____
8. Find the amount of sales tax on a \$50.49 item with a 6.25% sales tax rate. 8. _____
9. Hazel is paid a commission rate of 4% on all sales. If her sales were \$100,000 last month, what was her commission for the last month? 9. _____
10. Evelyn receives a 3.5% commission on all sales. If she sold \$1200 worth of merchandise last week, what was her commission? 10. _____
11. A salesman earned a commission of \$250 for selling \$56,000 worth of hardware. What is his commission rate? 11. _____
12. How much commission will Keith receive from the sale of an \$89,000 home if he receives 2% of the sale price? 12. _____
13. An insurance agent earned \$10,000 for selling \$2,500,000 worth of insurance. What is her commission rate? 13. _____

Find the amount of discount and the sale price.

- | | Original price | Discount Rate | |
|-----|----------------|---------------|-----------|
| 14. | \$70 | 10% | 14. _____ |
| 15. | \$5000 | 25% | 15. _____ |
| 16. | \$300 | 10% | 16. _____ |
| 17. | \$1000 | 30% | 17. _____ |
| 18. | \$200 | 50% | 18. _____ |
| 19. | \$65 | 15% | 19. _____ |
| 20. | \$85 | 20% | 20. _____ |

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Additional Exercises 7.6

Find the simple interest.

	Principal	Rate	Time	
1.	\$300	8%	2 years	1. _____
2.	\$1500	6%	3 years	2. _____
3.	\$3000	12%	2 years	3. _____
4.	\$1500	7%	7 years	4. _____
5.	\$1200	6.5%	6 months	5. _____
6.	\$800	12%	8 months	6. _____

Solve.

7. _____
7. Steve borrows \$2000 and agrees to pay it back in 2 years. If the simple interest rate is 10%, find the total amount he pays back.
8. _____
8. Matt takes out a 9-month short-term loan of \$1500 to buy a new computer. If the interest rate is 12%, find the total amount due at the end of the 9 months.
9. _____
9. A certificate of Deposit pays simple interest at a 7.5% interest rate. Find the value of a \$2000 18-month CD.
10. _____
10. Find the total amount due if \$500 is borrowed at 8% simple interest for 6 months.

Find the total amount in each compound interest account.

11. _____
11. \$8000 is compounded annually at a rate of 15% for 3 years.

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Additional Exercises 7.6 (cont.)

12. \$10,000 is compounded monthly at a rate of 5% for 1 year. 12. _____

13. \$500 is compounded quarterly at 10% for 2 years. 13. _____

14. \$3000 is compounded semiannually at a rate of 10% for 1 year. 14. _____

15. \$4000 is compounded quarterly at 8% for 2 years. 15. _____

Solve.

16. \$4200 is borrowed for 3 years. Find the total amount due at 6%, simple compounding. 16. _____

17. \$25,000 is borrowed for 20 years. Find the total amount due at 8%, simple compounding. 17. _____

18. \$2000 is borrowed for 9 months. Find the total amount due at 12%, simple compounding. 18. _____

Find the compound interest earned.

	Principal	Rate	Frequency	Time	
19.	\$12,000	10%	Monthly	1 year	19. _____

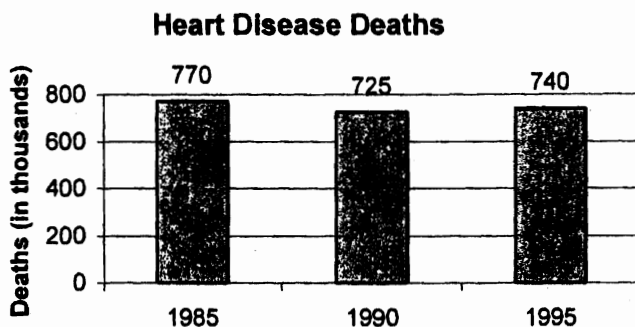
20.	\$1200	7%	Quarterly	7 years	20. _____
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Additional Exercises 8.1

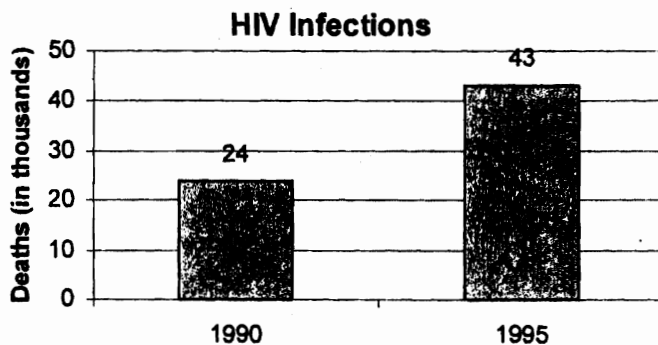
Use the following bar graphs for problems 1 – 5. Deaths from heart disease rounded to the nearest thousand.



Source: National Center for Health Statistics

1. Find the difference in heart related deaths from 1985 to 1995. 1. _____
2. Does this difference show a decrease or an increase in the number of deaths? 2. _____
3. Find the ratio of deaths in 1985 to 1990. 3. _____
4. Find the average number of heart disease related deaths for 1985, 1990, and 1995. 4. _____
5. What can be said about heart disease related deaths for this 10 year period? 5. _____

Use the following bar graph for problems 6 – 8.



Source: National Center for Health Statistics

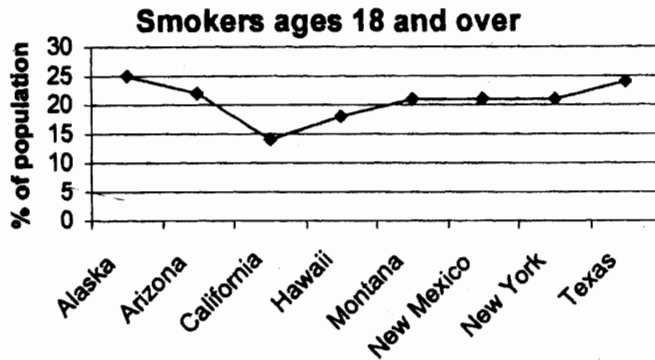
6. Find the difference between the number of HIV deaths in 1990 and 1995. 6. _____
7. Does this amount represent an increase or a decrease in deaths? 7. _____
8. Find the ratio of deaths in 1990 to the number in 1995. 8. _____

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Additional Exercises 8.1 (cont.)

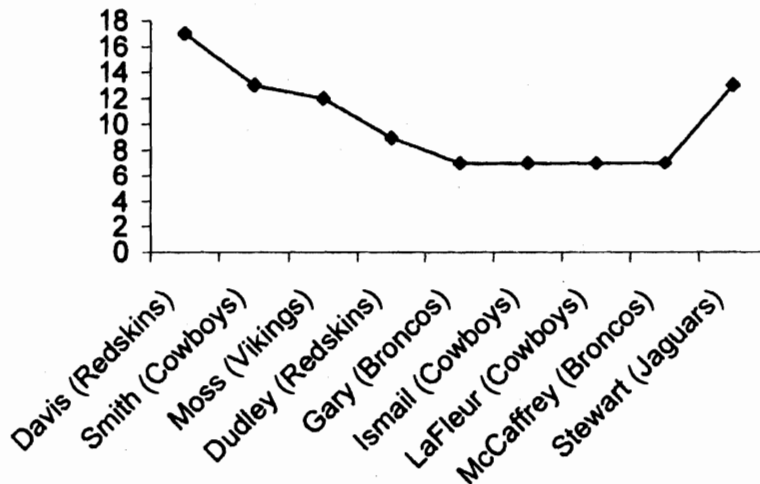
Use the following line graph for problems 9 – 12.



9. Estimate the percentage of 18 year old and older smokers for Alaska. 9. _____
10. Approximate the percentage of smokers for Hawaii. 10. _____
11. Approximate the percentage of smokers for Texas. 11. _____
12. What can be said from the line graph about Montana, New Mexico, and New York? 12. _____

Use the following line graph for problems 13 – 17.

Touchdowns (through 3/2000)



Source: ESPN Network

13. Find the number of touchdowns for Davis (Redskins). 13. _____
14. Find the number of touchdowns for Moss (Vikings). 14. _____

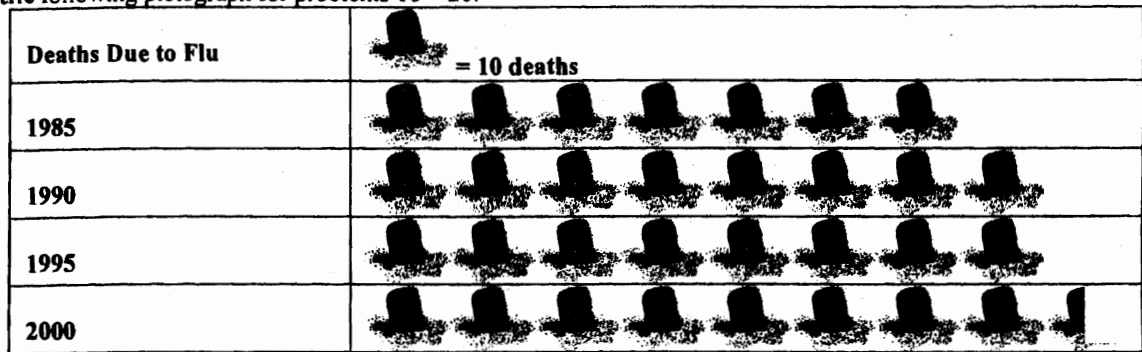
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Additional Exercises 8.1 (cont.)

15. Find the total number of touchdowns for the Bronco players. 15. _____
16. Find the total number of touchdowns for the Cowboy players. 16. _____
17. Which players had the same number of touchdowns? 17. _____

Use the following pictograph for problems 18 – 20.



Source: National Center for Health Statistics

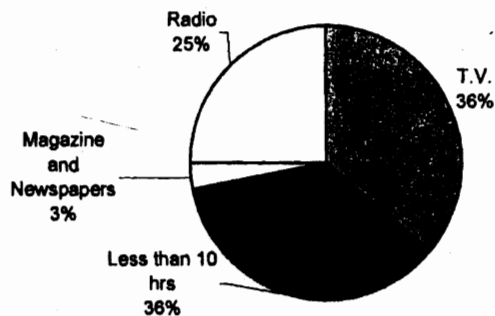
18. Estimate the difference between flu deaths for 1985 and 1990. 18. _____
19. What can be said about flu deaths over the years? 19. _____
20. Estimate the number of deaths from flu for 2000. 20. _____

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Additional Exercises 8.2

Use the following circle graph for problems 1 – 3.



Teens (13 – 19) spending 10 or more hours per week.

Source: Rand Youth Poll

Knowing how teens spend their time helps advertisers make decisions about strategies in marketing.

T.V. to time spent on magazines and newspapers.

- Find the ratio of time spent watching T.V. (more than 10 hours) to time less than 10 hours per week.
- Find the ratio of hours spent listening to the radio to time spent watching T.V.

- Find the ratio of time spent watching

1. _____

2. _____

3. _____

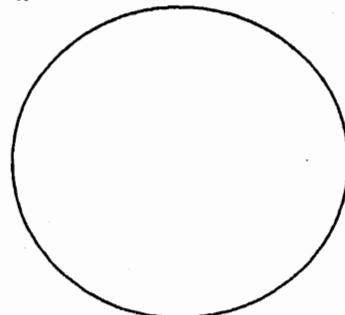
Use the following information for problems 4 – 7.

A local high school has 900 students.

Seniors	25%
Juniors	20%
Sophomores	20%
Freshmen	35%

- Use the information to draw a circle graph.

4.



- From your graph – find the ratio of freshmen to seniors.

5. _____

- Find the ratio of seniors to total students.

6. _____

- Find the ratio of juniors to freshmen.

7. _____

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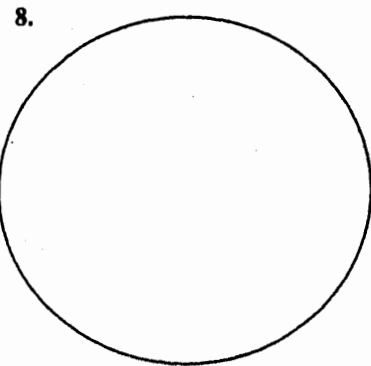
Additional Exercises 8.2 (cont.)

Use the following information for problems 8 – 11.

A survey of 50 cookie eaters revealed that

- 34 people preferred Chocolate Chip
- 10 people preferred Oatmeal Raisin
- 2 people preferred Fig cookies
- 2 people preferred Coconut cookies
- 2 people preferred Date Nut cookies

8. Use the information to make a circle graph.



9. Find the ratio of those who preferred Chocolate Chip to Oatmeal cookies.

9. _____

10. Find the ratio of those who preferred Coconut cookies to Chocolate Chip cookies.

10. _____

11. Find the ratio of those who preferred Date Nut cookies to the total number of people in the survey.

11. _____

12. Those who preferred Chocolate Chip Cookies represented almost half of the people surveyed. Is this statement true or false?

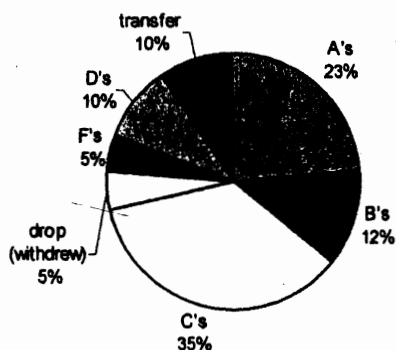
12. _____

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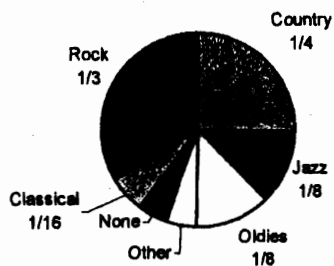
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Additional Exercises 8.2 (cont.)

The circle graph represents 100 students enrolled in a junior college algebra class.



13. Estimate the number of students receiving A's. 13. _____
14. Estimate the number of students receiving a C. 14. _____
15. Estimate the number of students who withdrew from the course. 15. _____
16. Find the ratio of students receiving A's to students receiving F's. 16. _____
17. Find the ratio of students receiving A's, B's, and C's to the total number of students. 17. _____



Of 100 people surveyed about their musical interests, (round to the nearest whole number):

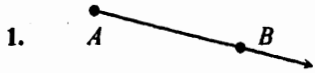
18. Determine the number of people who like Country Music. 18. _____
19. Estimate the number of people who like Rock. 19. _____
20. Estimate the number of people who like Jazz. 20. _____

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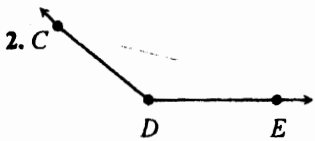
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Additional Exercises 9.1

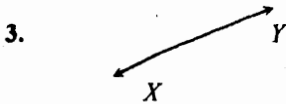
Identify each figure as a line, a ray, a line segment, or an angle.



1. _____

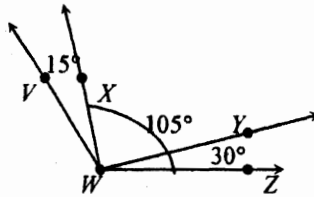


2. _____



3. _____

Find the measure of each angle in the figure.



4. $\angle XWY$

4. _____

5. $\angle XWZ$

5. _____

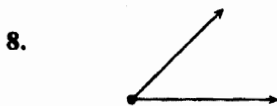
6. $\angle VWY$

6. _____

Classify each angle as acute, right, obtuse, or straight.



7. _____



8. _____



9. _____



10. _____

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Additional Exercises 9.1 (cont'd)

11. Find the complement of a 85° angle.

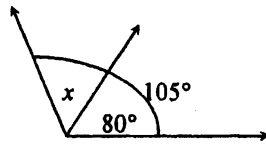
11. _____

12. Find the supplement of a 125° angle.

12. _____

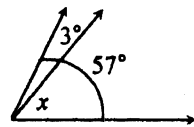
Find the measure of $\angle x$ in each figure.

13.



13. _____

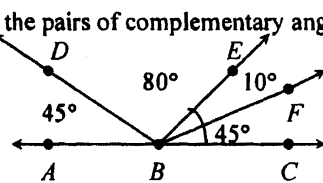
14.



14. _____

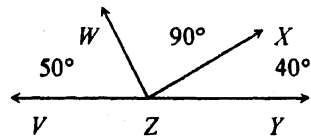
15. Identify the pairs of complementary angles.

15. _____



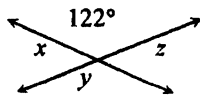
16. Identify the pairs of complementary angles.

16. _____



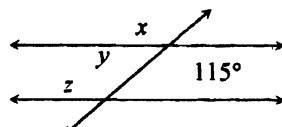
Find the measures of angle x , y , and z in each picture

17.



17. _____

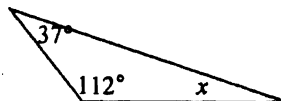
18.



18. _____

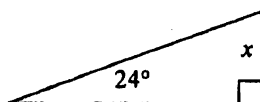
Find the measure of $\angle x$

19.



19. _____

20.



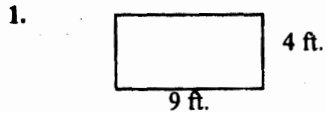
20. _____

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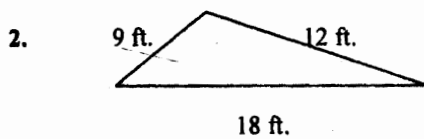
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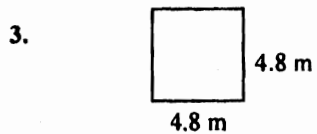
Find the perimeter of each figure.



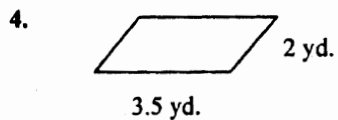
1. _____



2. _____



3. _____



4. _____

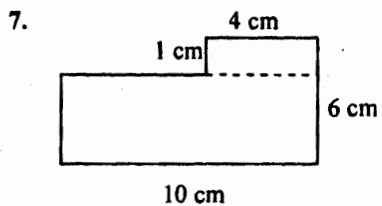
5. Baseboard is to be installed in a rectangular room that is 30 feet by 40 feet. Determine how much baseboard is needed.

5. _____

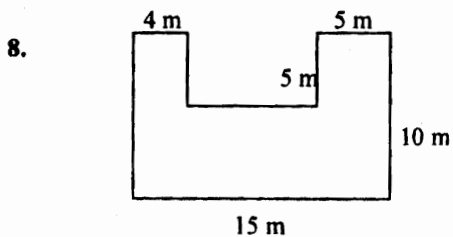
6. Find the amount of fencing that is needed to enclose a rectangular field 240 feet by 360 feet.

6. _____

Find the perimeter of each figure.



7. _____

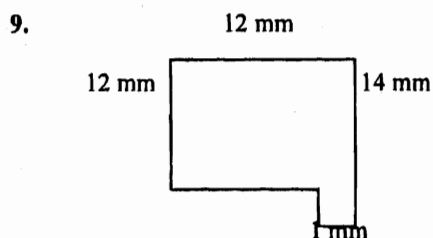


8. _____

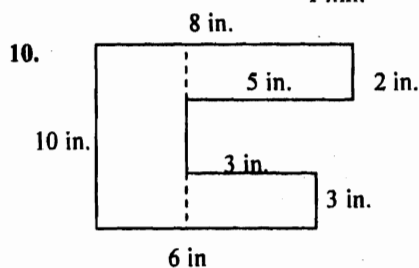
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Additional Exercises 9.2 (cont'd)



9. _____



10. _____

11. A regular octagon has sides of length 3 inches. Find its perimeter.

11. _____

12. A regular pentagon has sides of length 2.6 centimeters. Find its perimeter.

12. _____

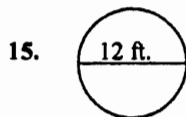
13. A landscape designer is planning a flower garden in the shape of a hexagon 2 feet on a side. The border to the garden costs \$2.50 a foot. Find the total cost of the border.

13. _____

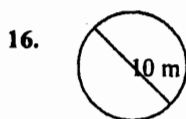
14. A landscape designer is planning a flower garden in the shape of an octagon 2.5 feet on a side. The border to the garden costs \$3.50 a foot. Find the total cost of the border.

14. _____

Find the circumference of each circle. Give the exact circumference and then an approximation. Use $\pi \approx 3.14$.



15. _____



16. _____

17. Find the circumference of a circle with radius of 7 cm.

17. _____

18. Find the circumference of a circle with radius of 3 mi.

18. _____

19. A circular track has a radius of 264 feet. About how many laps around the track does it take to make a mile? Round to a whole number.

19. _____

20. A landscape design calls for a circular water fountain. The circumference of the fountain is 31.4 ft. Find the length of pipe to the center for the water connections.

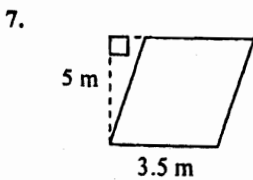
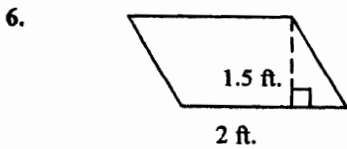
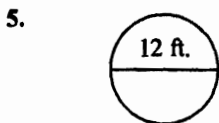
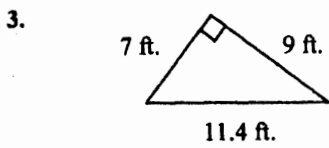
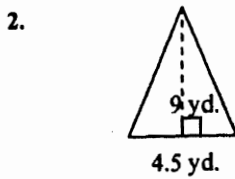
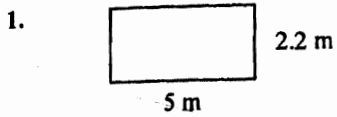
20. _____

Name:
Instructor:

Date:
Section:

Additional Exercises 9.3

Find the area of the geometric figure. If the figure is a circle, give an exact area and then use $\pi \approx 3.14$ to approximate the area.



1. _____

2. _____

3. _____

4. _____

5. _____

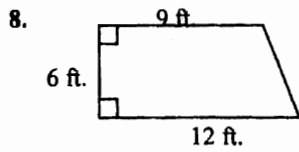
6. _____

7. _____

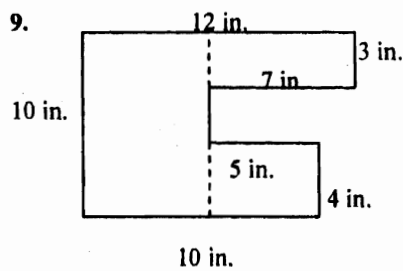
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Instructor:

Date:
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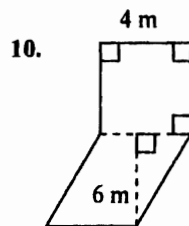
Additional Exercises 9.3 (cont'd)



8. _____



9. _____



10. _____

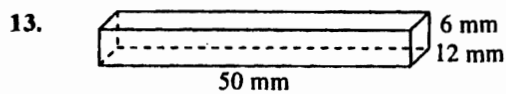
11. A page on a book measures 8.5 in. by 11 in. Find its area.

11. _____

12. A round tablecloth has a 48-inch diameter. Approximate its area. Use the approximation $\pi \approx 3.14$.

12. _____

Find the volume of each solid. Use $\frac{22}{7}$ for π . Approximate to the nearest hundredth when necessary.

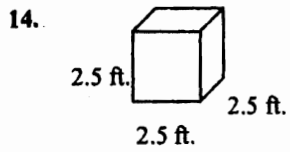


13. _____

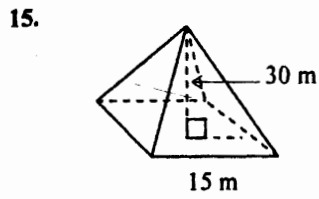
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Additional Exercises 9.3 (cont'd)



14. _____



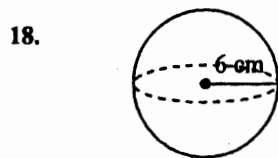
15. _____



16. _____



17. _____



18. _____

19. Approximate to the nearest hundredth, the volume of a cylinder 5 centimeters tall if the base has a diameter of 8 centimeters. Use $\frac{22}{7}$ for π .

19. _____

20. Find the capacity (volume in cubic centimeters) of a rectangular ice chest with inside measurements of 46 centimeters by 40 centimeters by 20 centimeters.

20. _____

Name:
Instructor:

Date:
Section:

Additional Exercises 9.4

Convert each measurement as indicated.

1. $2\frac{1}{3}$ miles to feet

1. _____

2. 7920 feet to miles

2. _____

3. 15 feet to yards

3. _____

4. 132 in. = _____ yd. _____ ft.

4. _____

5. 39 feet = _____ yd.

5. _____

6. 8 feet 4 in. = _____ in.

6. _____

Perform each indicated operation. Simplify the result if possible.

7. 3 yd. 2 ft. + 3 yd. 2 ft.

7. _____

8. 7 ft. 2 in. - 3 ft. 9 in.

8. _____

9. 7 yd. 1 ft. + 2

9. _____

10. 4×4 ft. 8 in.

10. _____

11. An airplane is cruising at an altitude of 39,600 feet. How many miles is this?

11. _____

Convert each measurement as indicated.

12. 100 m to kilometers

12. _____

13. 34.2 mm to decimeters

13. _____

14. 0.083 m to millimeters

14. _____

15. A 68 cm flag pole is mounted on a 17.5 cm pedestal. Find the height of the top of the flagpole from the ground.

15. _____

Perform each indicated operation.

16. 70 cm + 4.4 m

16. _____

17. 7 km - 5830 m

17. _____

18. $4 \cdot 17.2$ m

18. _____

19. 18.9 km + 3

19. _____

20. Clara needs 50 centimeters of ribbon to make a bow. How many bows can she make out of 8 meters of ribbon?

20. _____