

Chapter 5 Review

(5.1) Write each ratio as a fraction in simplest form.

1. 23 to 37

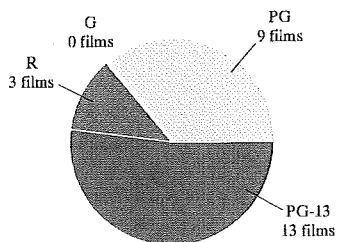
2. 6000 people to 4800 people

3. \$121 to \$143

4. 4.25 yards to 8.75 yards

The circle graph below shows how the top 25 movies (or films) of 2009 were rated. Use this graph to answer the questions.

Top 25 Movies of 2009



Source: MPAA

Note: There were no G-rated films in the top 25 for 2009

5. a. How many top 25 movies were rated PG?

b. Find the ratio of top 25 PG-rated movies to total top movies for that year.

6. a. How many top 25 movies were rated R?

b. Find the ratio of top 25 R-rated movies to total top movies for that year.

Write each rate as a fraction in simplest form.

7. 6 professors for 20 graduate research assistants

8. 15 word processing pages printed in 6 minutes

Write each rate as a unit rate.

9. 468 miles in 9 hours

10. 180 feet in 12 seconds

Determine whether each proportion is true.

11. $\frac{21}{8} = \frac{14}{6}$

12. $\frac{3.75}{3} = \frac{7.5}{6}$

Find the unknown number n in each proportion.

13. $\frac{n}{9} = \frac{5}{3}$

14. $\frac{4}{13} = \frac{10}{n}$

15. $\frac{27}{\frac{9}{4}} = \frac{n}{5}$

16. $\frac{0.4}{n} = \frac{2}{4.7}$

Solve. An owner of a Ford Escort can drive 420 miles on 11 gallons of gas.

- 17.** If Tom Aloiso runs out of gas in an Escort and AAA comes to his rescue with $1\frac{1}{2}$ gallons of gas, determine whether Tom can then drive to a gas station 65 miles away.
- 18.** Find how many gallons of gas Tom can expect to burn on a 3000-mile trip. Round to the nearest gallon.

Yearly homeowner property taxes are figured at a rate of \$1.15 tax for every \$100 of house value.

- 19.** If a homeowner pays \$627.90 in property taxes, find the value of his home.
- 20.** Find the property taxes on a town house valued at \$89,000.

(5.2) Solve.

- 21.** In a survey of 100 adults, 37 preferred pepperoni on their pizzas. What percent preferred pepperoni?
- 22.** A basketball player made 77 out of 100 attempted free throws. What percent of free throws was made?

Write each percent as a decimal.

- 23.** 83% **24.** 75% **25.** 0.5% **26.** 0.7%
- 27.** 200% **28.** 400% **29.** 26.25% **30.** 85.34%

Write each decimal as a percent.

- 31.** 2.6 **32.** 0.055 **33.** 0.35 **34.** 1.02
- 35.** 0.71 **36.** 0.65 **37.** 4 **38.** 9

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

- 39.** 1% **40.** 10% **41.** 25% **42.** 8.5%
- 43.** 10.2% **44.** $16\frac{2}{3}\%$ **45.** $33\frac{1}{3}\%$ **46.** 110%

Write each fraction or mixed number as a percent.

- 47.** $\frac{1}{5}$ **48.** $\frac{7}{10}$ **49.** $\frac{5}{6}$ **50.** $1\frac{2}{3}$
- 51.** $1\frac{1}{4}$ **52.** $\frac{3}{5}$ **53.** $\frac{1}{16}$ **54.** $\frac{5}{8}$

(5.4) Translate each to an equation and solve.

- 55.** 1250 is 1.25% of what number?
- 56.** What number is $33\frac{1}{3}\%$ of 24,000?

57. 124.2 is what percent of 540?

59. What number is 40% of 7500?

(5.5) Translate each to a proportion and solve.

61. 104.5 is 25% of what number?

63. What number is 36% of 180?

65. 93.5 is what percent of 85?

(5.6) Solve.

67. In a survey of 2000 people, it was found that 1320 have a microwave oven. Find the percent of people who own microwaves.

69. The number of violent crimes in a city decreased from 675 to 534. Find the percent decrease. Round to the nearest tenth of a percent.

71. This year the fund drive for a charity collected \$215,000. Next year, a 4% decrease is expected. Find how much is expected to be collected in next year's drive.

(5.7) Solve.

73. If the sales tax rate is 5.5%, what is the total amount charged for a \$250 coat?

75. Russ James is a sales representative for a chemical company and is paid a commission rate of 5% on all sales. Find his commission if he sold \$100,000 worth of chemicals last month.

77. A \$3000 mink coat is on sale for 30% off. Find the discount and the sale price.

(5.8) Solve.

79. Find the simple interest due on \$4000 loaned for 4 months at 12% interest.

81. Find the total amount in an account if \$5500 is compounded annually at 12% for 15 years.

83. Find the compound interest earned if \$100 is compounded quarterly at 12% for 5 years.

58. 22.9 is 20% of what number?

60. 693 is what percent of 462?

62. 16.5 is 5.5% of what number?

64. 63 is what percent of 35?

66. What number is 33% of 500?

68. Of the 12,360 freshmen entering County College, 2000 are enrolled in basic college mathematics. Find the percent of entering freshmen who are enrolled in basic college mathematics. Round to the nearest whole percent.

70. The current charge for dumping waste in a local landfill is \$16 per cubic foot. To cover new environmental costs, the charge will increase to \$33 per cubic foot. Find the percent increase.

72. A local union negotiated a new contract that increases the hourly pay 15% over last year's pay. The old hourly rate was \$11.50. Find the new hourly rate rounded to the nearest cent.

74. Find the sales tax paid on a \$25.50 purchase if the sales tax rate is 4.5%.

76. Carol Sell is a sales clerk in a clothing store. She receives a commission of 7.5% on all sales. Find her commission for the week if her sales for the week were \$4005. Round to the nearest cent.

78. A \$90 calculator is on sale for 10% off. Find the discount and the sale price.

80. Find the simple interest due on \$6500 loaned for 3 months at 20%.

82. Find the total amount in an account if \$6000 is compounded semiannually at 11% for 10 years.

84. Find the compound interest earned if \$1000 is compounded quarterly at 18% for 20 years.

Mixed Review

Find the unknown number n in each proportion.

$$85. \frac{3}{n} = \frac{15}{8}$$

$$86. \frac{42}{5} = \frac{n}{10}$$

Write each percent as a decimal.

$$87. 3.8\%$$

$$88. 24.5\%$$

$$89. 0.9\%$$

Write each decimal as a percent.

$$90. 0.54$$

$$91. 95.2$$

$$92. 0.3$$

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

$$93. 47\%$$

$$94. 6\frac{2}{5}\%$$

$$95. 5.6\%$$

Write each fraction or mixed number as a percent.

$$96. \frac{3}{8}$$

$$97. \frac{2}{13}$$

$$98. \frac{6}{5}$$

Translate each into an equation and solve.

$$99. 43 \text{ is } 16\% \text{ of what number?}$$

$$100. 27.5 \text{ is what percent of } 25?$$

$$101. \text{ What number is } 36\% \text{ of } 1968?$$

$$102. 67 \text{ is what percent of } 50?$$

Translate each into a proportion and solve.

$$103. 75 \text{ is what percent of } 25?$$

$$104. \text{ What number is } 16\% \text{ of } 240?$$

$$105. 28 \text{ is } 5\% \text{ of what number?}$$

$$106. 52 \text{ is what percent of } 16?$$

Solve.

$$107. \text{ The total number of cans in a soft drink machine is } 300. \text{ If } 78 \text{ soft drinks have been sold, find the percent of soft drink cans that have been sold.}$$

$$108. \text{ A home valued at } \$96,950 \text{ last year has lost } 7\% \text{ of its value this year. Find the loss in value.}$$

$$109. \text{ A dinette set sells for } \$568.00. \text{ If the sales tax rate is } 8.75\%, \text{ find the purchase price of the dinette set.}$$

$$110. \text{ The original price of a video game is } \$23.00. \text{ It is on sale for } 15\% \text{ off. What is the amount of the discount?}$$

$$111. \text{ A candy salesman makes a commission of } \$1.60 \text{ from each case of candy he sells. If a case of candy costs } \$12.80, \text{ what is his rate of commission?}$$

$$112. \text{ Find the total amount due on a 6-month loan of } \$1400 \text{ at a simple interest rate of } 13\%.$$

$$113. \text{ Find the total amount due on a loan of } \$5500 \text{ for } 9 \text{ years at } 12.5\% \text{ simple interest.}$$