Express each of the following as a reduced rational number.

$$-$$
 1. $5\frac{9}{16}$

$$-$$
 2. $\frac{36}{54}$

Identify as rational or irrational.

$$3. \sqrt{169}$$

$$\frac{1}{2}$$

$$\sqrt{\frac{25}{2}}$$

Simplify each of the following to a reduced rational number.

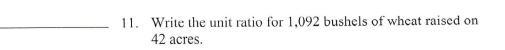
$$\frac{3}{7} \div \frac{4}{5}$$

$$-----7. \quad \sqrt{\frac{3}{10} + \frac{14}{25} \cdot \frac{5}{4}}$$

8. Express the ratio of 9 dogs to 8 boys in three different ways.

9. Write 36: 12 as a fraction in lowest terms.

______ 10. Write a ratio equivalent to $\frac{14}{17}$ using whole numbers.



The zoo has 6 tigers (3 are white), 8 lions, 3 lynx, and 3 black panthers. Express each of the following ratios in lowest terms.

_____ 12. lions to tigers

- _____ 13. lions and tigers to panthers
- _____ 14. black and white cats to those that are neither

_____ 15. Write the proportion 5 is to 19 as x is to 250. **Do not solve.**

16. Is the ratio $\frac{5}{9}$ equal to the ratio $\frac{85}{135}$? Write = or \neq .

 $\frac{17. \text{ Solve } \frac{6}{7} = \frac{x}{140}. \qquad 18. \text{ Solve } \frac{5}{2} = \frac{405}{n}.$

If a scale of 1 in. to 50 mi. is used in mapmaking, answer the following questions.

19. How far apart are two cities $3\frac{1}{2}$ in. apart on the map?

20. If two cities are 525 mi. apart, how far apart will they be on the map?

21. If an object that is 85 ft. long is represented on a scale drawing as a line 5 in. long, what is the scale used to make the drawing?

22. Write 0.48 as a rational number in lowest terms.

Write each of the following fractions as a decimal.

$$\frac{1}{1}$$
 24.

$$\underline{\hspace{1cm}}$$
 25. $\frac{23}{40}$

Write each of the following as a percent.

_____ 26. 1.25

_ 27.

_____ 28. Write $44\frac{4}{9}\%$ as a rational number in lowest terms.

Write an equation or a proportion used to solve each of the next three questions. Do not solve.

29. What percent of 80 is 23? **Do not solve.**

_____ 30. What is 15% of 212? **Do not solve.**

31. 75% of what number is 60? **Do not solve.**

_____ 32. Find 87% of 900.

.____

_____ 33. 156 is what percent of 200?

_____ 34. 70 is 5% of what number?

35. Find $4\frac{1}{4}\%$ of \$5,200.