

No Calculators Allowed. Show your work.

Perform the indicated operations. Reduce all answers. Reduce any improper fractions to a mixed number in lowest terms.

1.  $\frac{10}{27} \cdot 1\frac{7}{8}$

2.  $2\frac{2}{3} \cdot 1\frac{1}{6}$

3.  $2\frac{2}{5} \cdot 1\frac{3}{32}$

4.  $3\frac{1}{3} \div 2\frac{1}{2}$

5.  $1\frac{3}{7} \div 6\frac{1}{4}$

6.  $2\frac{1}{8} \div \frac{1}{4}$

7. 
$$\begin{array}{r} 4\frac{1}{8} \\ + 2\frac{3}{8} \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 5\frac{3}{5} \\ + 3\frac{4}{5} \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 1\frac{6}{7} \\ + 2\frac{5}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 3\frac{5}{6} \\ -1\frac{1}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 6\frac{7}{8} \\ -2\frac{5}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 5 \\ -2\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad \frac{2}{3} \\ + \frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad \frac{3}{4} \\ + \frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad \frac{3}{4} \\ \frac{2}{3} \\ + \frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 2\frac{2}{3} \\ +1\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 3\frac{3}{4} \\ +2\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 5\frac{4}{5} \\ +2\frac{1}{2} \\ \hline \end{array}$$

$$19. \quad \begin{array}{r} \frac{3}{5} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$20. \quad \begin{array}{r} \frac{4}{3} \\ - \frac{1}{2} \\ \hline \end{array}$$

$$21. \quad \begin{array}{r} \frac{4}{5} \\ - \frac{2}{3} \\ \hline \end{array}$$

$$22. \quad \begin{array}{r} 5 \frac{4}{5} \\ - 1 \frac{1}{2} \\ \hline \end{array}$$

$$23. \quad \begin{array}{r} 3 \frac{3}{4} \\ - 2 \frac{1}{3} \\ \hline \end{array}$$

$$24. \quad \begin{array}{r} 4 \\ - 2 \frac{1}{3} \\ \hline \end{array}$$

25. Bill takes  $1\frac{2}{3}$  pounds of bird seed out of a  $5\frac{1}{6}$  pound bag that was full. How many pounds of bird seed are left in the bag?

26. Tom runs  $3\frac{3}{4}$  miles on Monday and  $2\frac{1}{2}$  miles on Tuesday. How many miles must he run Wednesday if he wants to run a total of 10 miles for the three days?

27. Folsom has 80 gas stations. 60 of these gas stations do not have a car wash. What percent of the stations do not have a car wash?

28. In a class of 40 students, 18 of them ride a bike to class. What percent of the 40 students **do not** ride a bike to class?

29. 15% of the 60 cars in the school parking lot are owned by teachers? How many of these cars are owned by teachers?

30. 35% of the 40 math sections are offered at night. How many math sections are offered **during the day**?

31. Mary changed her work hours from 20 to 27 hours a week. What was the percent increase in her work hours?

32. The college changed its pay rate for staff from 10 dollars an hour to 8 dollars an hour. What was the percent decrease in pay?

33. Borders lists the price of a book as \$ 45. The sales tax is 8%. Find the actual purchase price.

### **Simplifying Ratios**

Write each comparison as a ratio in simplest form.

34. 21 days to 35 days

35. .21 cg. to 4.2 cg.

Write each comparison as a rate in simplest form.

36. 52 wins to 28 losses

37. 80 pints to 24 hour

Find the unit rate for each size of a given product and then decide which is the best buy.

38. Movies Tickets: \$ 57.05 for 7 movies or \$ 123.75 for 15 movies.

Use the relationships below to convert the given measurements.

$$1 \text{ foot (ft.)} = 12 \text{ inches (in.)}$$

$$1 \text{ yard (yd.)} = 3 \text{ feet (ft.)}$$

$$16 \text{ ounces (oz.)} = 1 \text{ pound (lb)}$$

$$8 \text{ fluid ounces (fl. oz.)} = 1 \text{ cup (c)}$$

$$4 \text{ cups (c)} = 1 \text{ quart (qt.)}$$

$$4 \text{ quarts (qt.)} = 1 \text{ gallon (gal.)}$$

39. Convert 60 in. to ft.

40. Convert 14 yd. to ft.

41. Convert 10 lb. to oz.

42. Convert 5 cups to fl. oz.

43. Convert 24 cups to quarts

44. Convert 28 qt. to gal.

Use the relationships below to convert the given measurements.

$$1 \text{ inch (in.)} \approx 2.5 \text{ cm}$$

$$1 \text{ yard} \approx .9 \text{ m}$$

$$1 \text{ mile (mi.)} \approx 1.6 \text{ km}$$

45. Convert 30 cm to in.

46. Convert 12 yd. to m

47. Convert 4.8 km to mi.

48. Betty's Fabrics sells fabric for 5 dollars a yard. How much would 6 feet cost?

49. A local Jeweler sells chain for 50 cents an inch. How much would a local artist have to pay for 2 yards of this chain?

Solve for x:

$$50. \frac{x}{10} = \frac{3}{5}$$

$$51. \frac{x}{9} = \frac{3}{2}$$

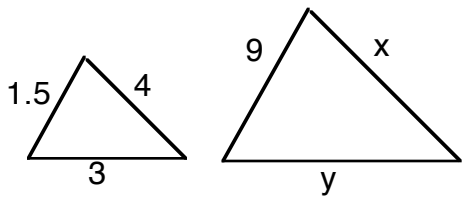
$$52. \frac{12}{5} = \frac{x}{\frac{4}{3}}$$

53. A local building ordinance requires that for every 15 workers there are 8 regular parking places. If there are 120 workers at an office how many regular parking places are required ?

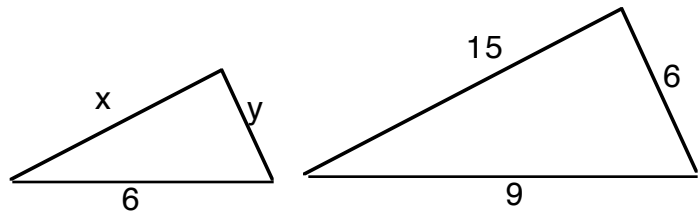
54. Julie's bread recipe feeds 8 people and contains  $\frac{2}{3}$  cups of sugar. If she wants to feed 36 people how many cups of sugar are needed.

**Find the missing sides for the similar triangle shown. Show the set up and work**

55.



56.



## Answers Chapter 1 and 2 Review

1.  $\frac{25}{36}$
2.  $3\frac{1}{9}$
3.  $2\frac{5}{8}$
4.  $1\frac{1}{3}$
5.  $\frac{8}{35}$
6.  $8\frac{1}{2}$
7.  $6\frac{1}{2}$
8.  $9\frac{2}{5}$
9.  $4\frac{4}{7}$
10.  $2\frac{2}{3}$
11.  $4\frac{1}{4}$
12.  $2\frac{4}{5}$
13.  $1\frac{5}{12}$
14.  $1\frac{11}{20}$
15.  $1\frac{11}{12}$
16.  $4\frac{1}{6}$
17.  $5\frac{19}{20}$
18.  $8\frac{3}{10}$
19.  $\frac{1}{10}$
20.  $\frac{5}{6}$
21.  $\frac{2}{15}$
22.  $4\frac{3}{10}$
23.  $1\frac{5}{12}$
24.  $1\frac{2}{3}$
25.  $3\frac{1}{2}$  lbs.
26.  $3\frac{3}{4}$  miles
27. 75%
28. 55%
29. 9 cars
30. 26 sections
31. 35%
32. 20%
33. \$ 48.60
34.  $\frac{3}{5}$
35.  $\frac{1}{20}$
36.  $\frac{13 \text{ wins}}{7 \text{ loss}}$
37.  $\frac{10 \text{ pints}}{3 \text{ hour}}$
38. 7 movies are \$ 8.15 a movie and 15 movies are \$ 8.25 a movie  
The best buy is the 7 movies for \$ 57.05
39. 5 ft.
40. 42 ft.
41. 160 oz.
42. 40 fl. oz.
43. 6 qt.
44. 7 gallons
45. 12 in.
46. 10.8 m
47. 3 miles
48. \$ 10
49. \$ 36
50.  $x = 6$
51.  $x = 13\frac{1}{2} = 13.5$
52.  $x = 3\frac{1}{5} = 3.2$
53. 64 places
54. 3 cups
55.  $x = 24$  and  $y = 18$
56.  $x = 10$  and  $y = 4$