

## Review Problems for 8th Grade Algebra 1 Standard

### Problem Solving

For each problem use one or more of the following strategies:

- Draw a diagram
- Guess and test
- Look for a pattern
- Make a table
- Solve a simpler problem
- Use logical reasoning
- Work backwards

1. Jeremy, Rich, Lindsay, and Ava want to play each of the others in tennis. How many games must they play?
2. Find two consecutive odd integers whose product is 323.
3. Annie bought 9 rolls of film to take 180 pictures on a field trip. Some rolls had 36 exposures and the rest had only 12. How many rolls of each type did Annie have?
4. Adam made a display of books at the book fair. One book was in the first row and the other rows each had two more books than the row before it. How many books does Adam have if he has nine rows?
5. Lauren has 6 coins, none of which is a half dollar. The coins have a value of \$0.85. What coins does she have?
6. Lockers in the middle school are numbered 1 through 120. How many of the numbers contain the digit 8?
7. What is the sum of all the numbers from 1 to 100? (Hint: What is  $1 + 100$ ? What is  $2 + 99$ ?)
8. Chi has a dog, a horse, a bird, and a cat. Their names are Bo, Cricket, K.C., and Tuffy. Tuffy and K.C. cannot fly or be ridden. The bird talks to Bo. Tuffy runs from the dog. What is each pet's name?
9. A math class has 25 students. There are 13 students who are only in the band, 4 who are only on the swim team, and 5 who do both. How many students are not in either activity?

10. Kristi gave this puzzle to Sarah: I am thinking of a number. I double it, then triple the result. The final result was 36. What is my number?
11. Christian paid \$12.50 for a taxi fare from his home to the airport, including a \$1.60 tip. City Cab charges \$1.90 for the first mile plus \$0.15 for each additional  $\frac{1}{6}$  of a mile. How many miles is Christian's home from the airport?

## Numbers

12. Which numbers are prime and which are composite? (a) 40 (b) 57 (c) 23
13. List all the factors of each number. (a) 32 (b) 27
14. Use a factor tree to write the prime factorization of each number. (a) 18 (b) 150
15. Find the G.C.F. of each set of numbers. (a) 12 and 22 (b) 24 and 48
16. Find the L.C.M of each set of numbers (a) 16 and 20 (b) 8 and 9
17. Fill in the blank. (a)  $\frac{3}{7} = \frac{\square}{21}$  (b)  $\frac{5}{6} = \frac{20}{\square}$
18. Write in simplest form. (a)  $\frac{8}{16}$  (b)  $\frac{14}{56}$  (c)  $\frac{27}{33}$
19. Write as a decimal (a)  $\frac{3}{10}$  (b)  $\frac{1}{6}$
20. Write as a fraction. (a) 0.25 (b) 0.875
21. Write as a mixed number (a)  $\frac{12}{7}$  (b)  $\frac{22}{5}$
22. Write as an improper fraction (a)  $2\frac{1}{2}$  (b)  $5\frac{1}{6}$
23. Add and write the answer in simplest form. (a)  $\frac{2}{7} + \frac{3}{7}$  (b)  $6\frac{2}{3} + 3\frac{4}{5}$
24. Subtract and write in simplest form. (a)  $8\frac{5}{8} - 6\frac{1}{4}$  (b)  $12\frac{3}{4} - 4\frac{5}{6}$

25. Multiply and write in simplest form. (a)  $\frac{2}{5} \cdot \frac{3}{4}$  (b)  $1\frac{1}{2} \times 5\frac{3}{4}$
26. Divide and write answer in simplest form. (a)  $\frac{3}{5} \div \frac{1}{2}$  (b)  $3\frac{1}{6} \div 1\frac{3}{4}$
27. Write as a percent. (a) 0.56 (b)  $\frac{7}{8}$
28. Write as a decimal. (a) 8.5% (b) 110%
29. Write as a fraction or mixed number in simplest form.  
(a)  $\frac{3}{4}\%$  (b) 450%
30. Write each expression in standard form.  
(a)  $4^3$  (b)  $9^4$  (c)  $12^2$  (d)  $6^2 \cdot 7^2$