

**One point per problem**

1. Is the product  $2 \times 3 \times 5 \times \dots \times 51 \times 53 \times 54$  even or odd?
2. Given the following clues what is this mystery number:              
Each digit is unique.  
The number is divisible by 3 and 9.  
The ones digit is eight times greater than hundreds digit.  
The hundreds digit is one greater than the tens digit.  
The tens digit is neither positive or negative.
3. Six friends decide that they will call each other tonight. They want to talk to each other only once. How many calls will be made in all?
4. After a health screening, Ms. Kato reported the following results: of the 25 students in her class, 11 need a dental check-up, 17 need an eye exam, and 5 need neither a dental check-up nor an eye exam. How many students need both?
5. Three sisters shared their parent's inheritance. Jane got  $\frac{1}{2}$  of the money. Sally got  $\frac{1}{5}$  of the money. Ally got \$3,000. How much money was the total inheritance?
6. If two carpenters can build one deck in one day, at the same rate, how many days will it take 6 carpenters to build 12 decks?
7. If the area of a triangle is  $24\text{m}^2$ , and its height is 6m, what is the length of its base?
8. A delivery truck leaves a warehouse and travels in the following directions: 6 km east, then 4 km south, then 2 km west, and 7 km north. How far is the truck from the warehouse at the end of the trip?
9. Tanya earns a salary of \$1050 per month, plus a commission of 2% of sales. What must be the amount of her sales to earn a total of at least \$1,800 in one month?
10. A math contest consists of ten problems. Three points are given for each correct answer. One point is deducted for each incorrect answer. Estelle answers all the problems and scores 18 points. How many correct answers does she have?

**Two points per problem**

11. Find the greatest 4-digit number that has exactly three factors.
12. The length of the smallest side of a triangle is 2 m less than the second side, and the length of the longest side is 4 m more than the second side. Find the length of the three sides of the triangle if the perimeter is 32 m.
13.  $\angle EOD$  is a central angle with measure  $45^\circ$ . The radius of the circle is 3cm. Find the length of arc  $ED$  and round to the nearest tenth.
14. In a music poll of 25 students, 15 liked rock, 9 liked jazz, and 12 liked rap. Four students liked all three types of music, 4 liked only rock and jazz, and 5 liked only rock and rap. If no students liked only jazz and rap, how many students did not like any of these types of music?
15. Al, Barbara, Carla and Dan have different vehicles: a sports car, a van, a pick-up truck, and a convertible. Use the clues to tell who owns each vehicle.
  - a. Barbara went for a ride in her friend's convertible on Saturday and another friend's sports car on Sunday.
  - b. Carla does not own a sports car.
  - c. Dan's name rhymes with his vehicle.

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1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_ phone calls
4. \_\_\_\_\_ need both
5. \$ \_\_\_\_\_
6. \_\_\_\_\_ days
7. \_\_\_\_\_ meters
8. \_\_\_\_\_ kilometers
9. \$ \_\_\_\_\_
10. \_\_\_\_\_ correct answers

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11. \_\_\_\_\_
12. small side = \_\_\_\_\_ meters  
second side = \_\_\_\_\_ meters  
longest side = \_\_\_\_\_ meters
13. \_\_\_\_\_ centimeters
14. \_\_\_\_\_ students
15. Al = \_\_\_\_\_  
Barbara = \_\_\_\_\_  
Carla = \_\_\_\_\_  
Dan = \_\_\_\_\_